SAMSUNG

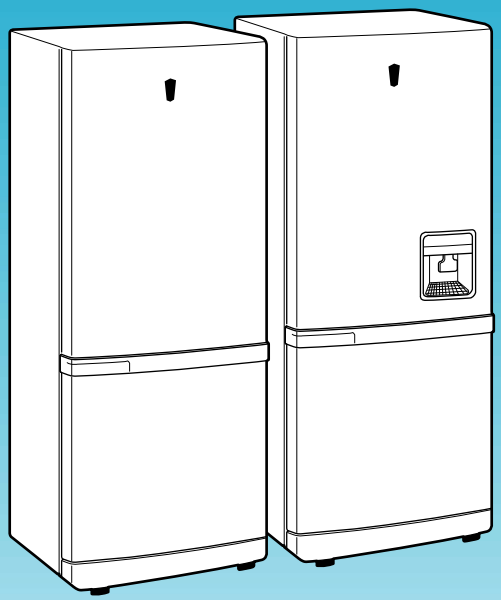
REFRIGERATOR

Model : SR-L676EV
SR-L678EV
SR-L626EV
SR-L628EV

CFC FREE

SERVICE Manual

REFRIGERATOR



SR-L676EV
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CONTENTS

1. Precautions
2. Product Specifications
3. Electrical Part Specifications & Standard
4. Circuit Diagram
5. Functions & Operating Instruction
6. Circuit Descriptions
7. Troubleshooting
8. Parts List
9. Disassembly & Assembly
10. PCB Circuit Diagram
11. PCB Parts List
12. Specifications of Main Components

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August, 1998
Printed in Korea
Code No. DA68-60281C

1. Precautions

Warning : Please abide by the following precautions in order to conduct the maintenance procedures in a safety fashion.

1-1. Caution when doing repairs

- Do work after extinguishing fire in the surrounding area. When freon-gas makes contact with the heater, hazardous gas will leak out.
- Don't use welding machines in confined indoors.
- In the case of gas leakage, always open the windows.
- When cutting the SUCTION, DISCHARGE pipe of the compressor, always take caution of the inner pressure of the remaining gas.

1-2. Take out the power plug

- Always take out the power plug from the outlet when doing repairs.

1-3. Be careful of electric shocks

- When inspecting the circuit, don't touch the battery charger and be careful of electric shocks.

1-4. Use proper components

- Always use the component labeled in the service component chart when replacing components for repairs.

1-5. Use proper tools

- Always use proper tools for repairs. If worn out tools are used, it would cause defects in tuning and electrical contact, leading to accidents.

1-6. When doing repairs, inspect the **POWER CORD** or whether there is fire in the lead wire and make sure they are replaced.

1-7. Cutting of LEAD-WIRE

- For connecting the lead-wire that has been cut off, use soldering or connector and always disconnect the vinyl tapes.

1-8. Check for disconnection

- After completing the assembly, always measure the disconnection resistance level, and turn on the power after checking it is above 1MΩ.

1-9. Earth

- Check the status of earthing and repair the incomplete ones.

1-10. Be careful of children

- There is always the possibility of danger involved so make sure children can't come nearby when doing repairs.

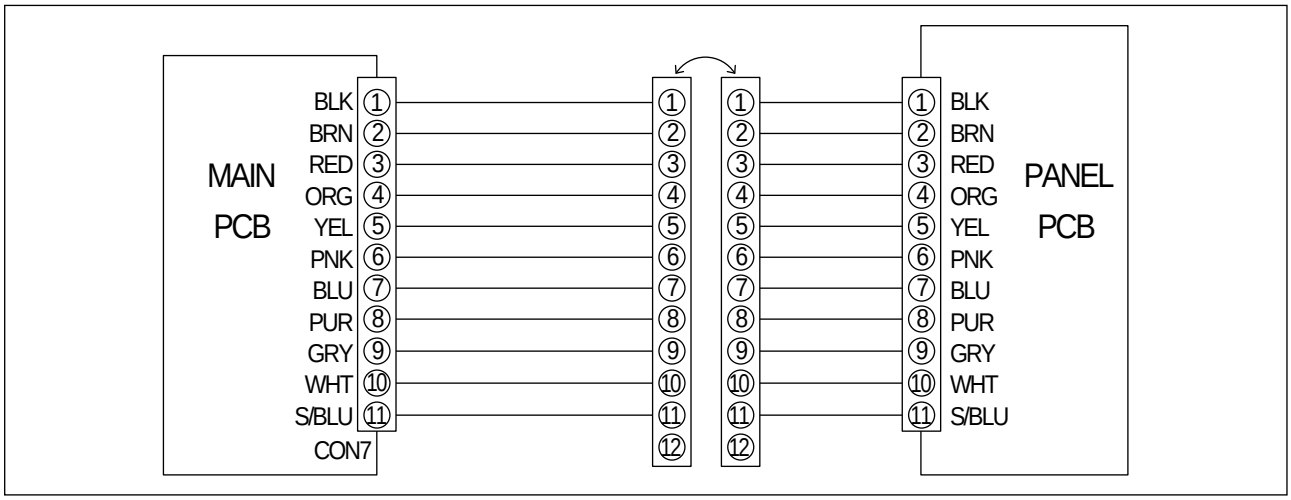
Cleaning : After completing repairs, clean the surrounding area and the refrigerator and tell the consumer about the repairs being made.

	Refers to prohibition.
	Refers to prohibition of dismantling.
	Refers to prohibition of contact.
	Refers to guidelines which have to be followed.
	Refers to detaching the power plug from the outlet.
	Refers to earth connection for preventing electric shocks.

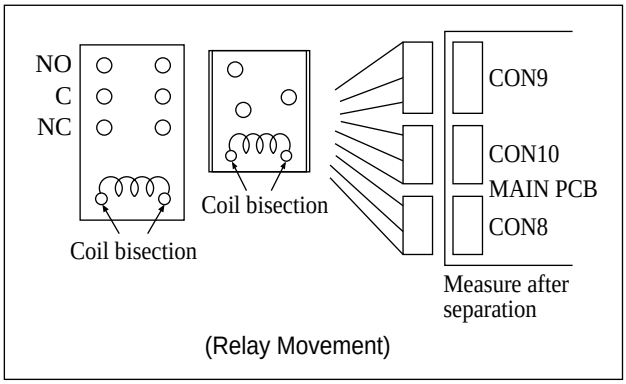
Warning	Refers to possibility of death or serious injury of a person.
Caution	Refers to possibility of injury of a person or damage to property.

Reference

Reference1 The connection of DOOR-CABI



Reference2 Inspection of Relay



* First separate the housing connected to the main PCB CON C8, 09, 10 and measure the following items.

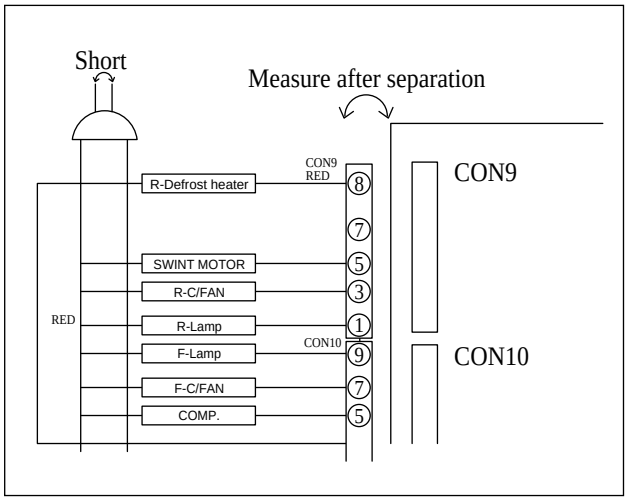
1. Measure the coil bisection of the relay and check whether it works.
2. Measure the apex bisection for open circuit.

Apex category	The voltage of coil bisection	Judging the apex bisection
Apex 3	DC 12V(Operation)	C:NO SHORT
		C:NC OPEN
	DC 05V(Standstill)	C:NO OPEN
		C:NC SHORT
Apex 2	DC 12V(Operation) DC 0V(Standstill)	SHORT
		OPEN

Note) C → Common, NO → Normal open, NC → Normal close

3. When it operates as above, it is normal and when it does not operate, report the corresponding relay.

Reference3 Check for malfunctioning of the subordinate



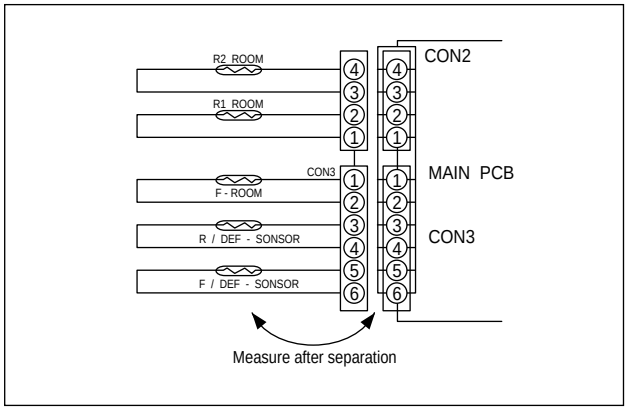
Note) The compressor is impossible to measure resistance by the running and starting condenser.

* Cut off the power code, separate the housing from the main PCB CON 08, 09, 10 and measure the following.

1. Measure resistance between the terminals and check for malfunctioning of L / W.

Subordinate	Measurement terminal	Evaluation of measurement result
R Defrost heater	CON9 ⑨ & CON10 ③	
F Defrost heater	CON8 ③ & CON10 ③	0Ω or ∞Ω(defect)
Comp	CON8 ⑤ & CON10 ⑤	Impossible to measure 0Ω indicator
Swing motor	CON8 ① & CON9 ⑤	0Ω or ∞Ω(defect)
R-Circulation fan	CON8 ① & CON9 ③	
F-Circulation fan	CON8 ① & CON10 ⑦	
R-Lamp	CON8 ① & CON9 ①	
F-Lamp	CON8 ① & CON10 ⑨	

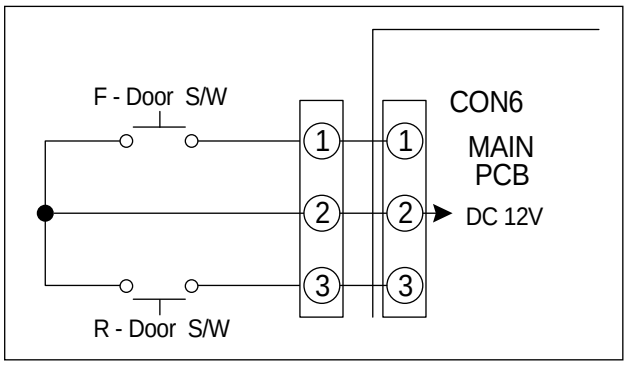
Reference4 Inspection of the sensor



* Separate the housing connected to main PCB CON2 and CON3.
* Resistance value lowers while temperature rises, because it is a NTC type sensor.

1. R1 sensor measures resistance of CON2 between ①~②.
2. R2 sensor measures resistance of CON2 between ③~④.
3. Freezer sensor measures resistance of CON3 between ①~②.
4. R-defrost sensor measures resistance of CON3 between ③~④.
5. F-defrost sensor measures resistance CON3 between ⑤~⑥.
6. The measurement value above is calculated by comparing the present temperature of the sensor and the temperecture table in specification found in the manual.

Reference5 Checking the Door S/W



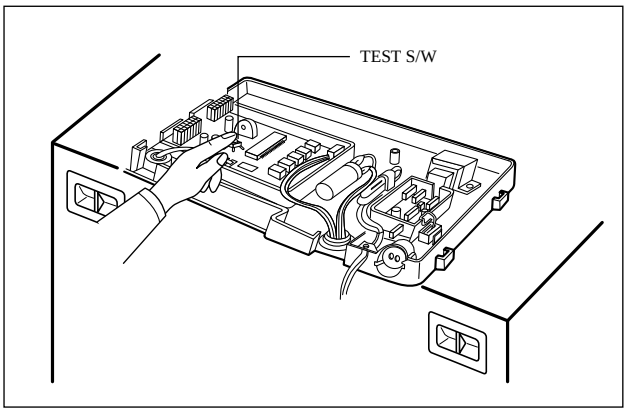
(Refrigerator Bulb)

1. Open the door and check if the freezer bulb turns on.
2. Press the Door S/W and check if the freezer bulb turns off.
3. Close the door of freezer and repeat 1 and 2 for refrigerator.
4. If there is a problem, check bulb and door S/W.
5. Check wire connection.

(Micom signal)

1. Check if CON6 ① and ③ is 0V DC after closing the F·R doors.
2. Check if CON6 ① is 12V DC when opening F door.
   Check if CON6 ③ is 12V DC when opening R door.
3. If there is problem, check door S/W and wire connection.

Reference6 Forced starting & forced defrosting



(Forced starting)

* This function is used to turn on the comp and fan immediately regardless of the temperature of freezer.

1. Press the button on the PCB after removing the main PCB cover from the upper part of refrigerator.
2. Buzzer will sound to indicate the forced starting.

(Forced defrosting)

* This function is used to turn on the defrosting regardless of defrost time.

1. Press the button twice during forced starting. Then, defrosting is performed.
2. If the button is press 3 times during R-defrosting, F-defrosting is also performed at the same time.
3. If the button is pressed 4 times during R-f defrosting, test mode is released.

Reference7 Sensor resistance and voltage conversion table for temperature
(Sensor pressure voltage 10KΩ – Voltage converted by the F-reference)

*** Voltage conversion table depends on H/W structure of MICOM port input voltage.**

Sensor Short : Micom 0V.
Sensor Open : Micom 5V.

✻ Sensor partial pressure resistance 10KΩ

TEMP.	Resistance KΩ ± 1%	Voltage(V)	TEMP.	Resistance KΩ ± 1%	Voltage(V)	TEMP.	Resistance KΩ ± 1%	Voltage(V)
– 35	68.648	4.364	– 13	22.832	3.477	9	9.016	2.37
– 34	65.011	4.333	– 12	21.814	3.428	10	8.673	2.322
– 33	61.595	4.301	– 11	20.848	3.379	11	8.345	2.274
– 32	58.384	4.268	– 10	19.932	3.329	12	8.032	2.227
– 31	55.366	4.235	– 9	19.062	3.279	13	7.732	2.18
– 30	52.526	4.2	– 8	18.237	3.229	14	7.446	2.134
– 29	49.854	4.164	– 7	17.453	3.178	15	7.172	2.088
– 28	47.337	4.127	– 6	16.709	3.127	16	6.910	2.043
– 27	44.967	4.09	– 5	16.001	3.076	17	6.659	1.998
– 26	42.733	4.051	– 4	15.328	3.025	18	6.420	1.954
– 25	40.626	4.012	– 3	14.688	2.974	19	6.190	1.911
– 24	38.640	3.972	– 2	14.080	2.923	20	5.970	1.869
– 23	36.765	3.93	– 1	14.501	2.872	21	5.759	1.786
– 22	34.995	3.888	0	12.949	2.821	22	5.557	1.786
– 21	33.323	3.845	1	12.424	2.77	23	5.363	1.745
– 20	31.743	3.802	2	11.924	2.719	24	5.178	1.705
– 19	30.250	3.757	3	11.447	2.668	25	5.000	1.666
– 18	28.838	3.712	4	10.993	2.618	26	4.829	1.628
– 17	27.502	3.666	5	10.559	2.567	27	4.665	1.59
– 16	26.237	3.62	6	10.146	2.518	28	4.508	1.553
– 15	25.040	3.573	7	9.752	2.468	29	4.357	1.517
– 14	23.906	3.525	8	9.375	2.419	30	4.212	1.481

2. Product Specifications

Model		SR-L628EV	SR-L678EV	SR-L626EV	SR-676EV
Type		(LMF(Freezer/Refrigerator) 2 Door)			
Freezer performance		★★★★ (4-STAR)			
Temperature control		Electronic control			
Water dispenser		Yes		No	
Net Capacity *l*/(ft^3)	Freezer	171(6.04)	192(6.78)	171(6.04)	192(6.78)
	Refrigerator	345(12.18)	376(13.28)	351(12.39)	382(13.49)
	Total	516(18.22)	568(20.06)	522(18.43)	574(20.27)
Net dimension (WXDXH)		820X715X1790 (mm) (SR-L626(8)EV) 820X765X1790 (mm) (SR-L676(8)EV)			
Refrigerant		HFC-134a(160gr)			
Foam	Cabinet insulation	CYCLO-PENTANE			
	Door insulation	CYCLO-PENTANE			
Liner	Cabinet	A.B.S			
	Door	A.B.S			
Net weight		114Kg		113Kg	

3. Electrical part specifications & standard

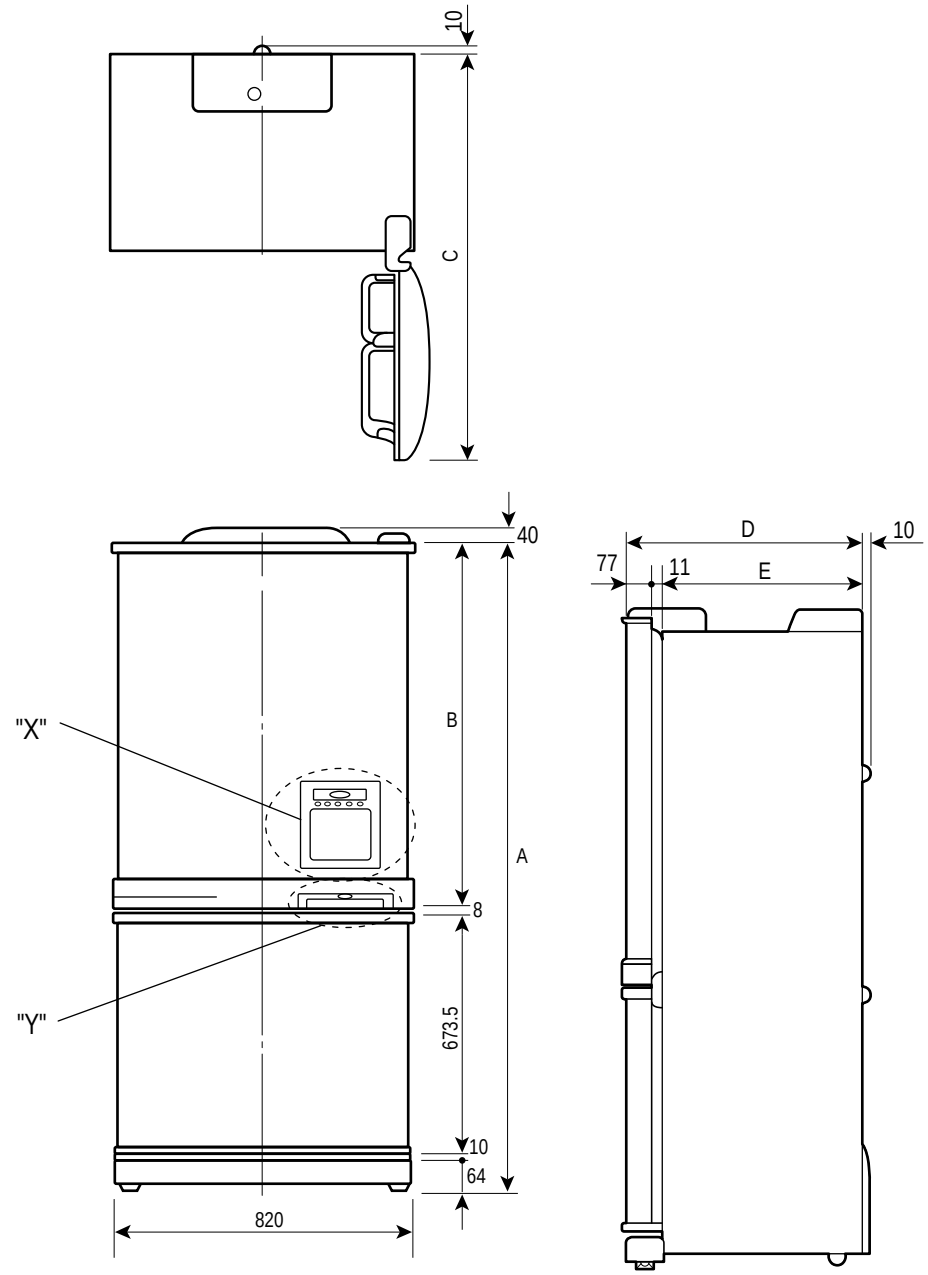
ITEM			STANDARD					
Model			SR-L626/628EV		SR-L626(8/676(8)EV		SR-L676/678EV	
Input Source			220V	240V	115V	127V	220V	240V
Refrigeration Cycle	Compressor	Model	SK182H-L2U	SK182Q-L2U	SK182E-L2W	SK182P-L2W	SK190H-L2U	SK190Q-L2U
		Starting type	RSCR		CSR		RSCR	
		Oil charge	Freon α-15(ESTER)					
	Evaporator	Freezer	Split Fin Type					
		Refrigerator	Split Fin Type					
	Condenser		Forced & Natural Convection Type					
	Dryer		Molecular Sieve XH-9					
	Capillary tube		ID0.85XL2500 3.79kg/cm^2					
	Earth screw		BSBN(Brass screw)					
	Door switch		250V/0.5A					

ITEM				STANDARD	
Temperature	Freezer	Type	Mode	ON(˚C)	OFF(˚C)
		F-Sensor	High	–20˚C	–22˚C
			Mid	–16.5˚C	–18.5˚C
			Low	–14˚C	–16˚C
	Refrigerator	Type	Mode	ON(˚C)	OFF(˚C)
		R-Sensor	High	–0.5˚C	–1.5˚C
			Mid	3.5˚C	2.5˚C
			Low	6.5˚C	5.5˚C
Electrical parts	Defrosting		Defrost cycle	Freezer:6 – 16hr/Refrigerator:12 – 32hr	
			Rest time	10min±2min	
			First cycle	4hr±10min	
	Sensor	Freezer-Sensor		502AT	
		Refrigerator-Sensor		502AT	
		FRE EVAP-Sensor		502AT	
		REF EVAP-Sensor		502AT	
		Room TEMP-Sensor		502AT	
	Heater	FRE Defrost-Heater		200W (115V, 127V, 220V, 240V)	
		REF Defrost-Heater		130W (115V, 127V, 220V, 240V)	
		Lamp-Heater		2W (115V, 127V, 220V, 240V)	
	Fuse	FRE Defrost-Fuse		250V 10A 72 ± 4˚C	
		REF Defrost-Fuse		250V 10A 72 ± 4˚C	

VOLTAGE		115V	127V	220V(626/628EV)	220V(676/678EV)	240V
CONDENSER	STARTING	125VAC/125μF	125VAC/125μF			
	RUNNING	250VAC/12μF	250VAC/12μF	350VAC/5μF	350VAC/5μF	350VAC/5μF
OVER-LOAD PROTECTOR	MODEL	4TM445SHBYY-53	4TM444NHBYY-53	4TM308PHBYY-53	4TM314RHBYY-53	4TM232SHBYY-53
	ON TEMP.	690˚C				
	OFF TEMP.	135˚C	120˚C	125˚C	130˚C	135˚C
STARTING-RELAY	MODEL	PTHAS-T100M200B	PTHAS-T100M200B	PTHAS-T220M350D	PTHAS-T220M350D	PTHAS-T330M385D
	RESISTANCE	10Ω ± 20%		22Ω ± 20%		33Ω ± 20%
MOTOR-FAN	FRE. REF.	IS3208TMDA-4	IS3208TMDA-8	IS3208TMDA-2A		IS3208TMDA-6
	CIRCUIT-MOTOR	IS3208-SCF6A	IS3208-SCO6A	IS3208-SCF7A		IS3208-SCL5A
LAMP	FRE.	110V~130V/15W		220V/15W		240V/15W
	REF.	OSRAM DEULX S/E IIW				
MOTOR-GEARED	REF.	M2BC18AR02		M2LC18AR02		

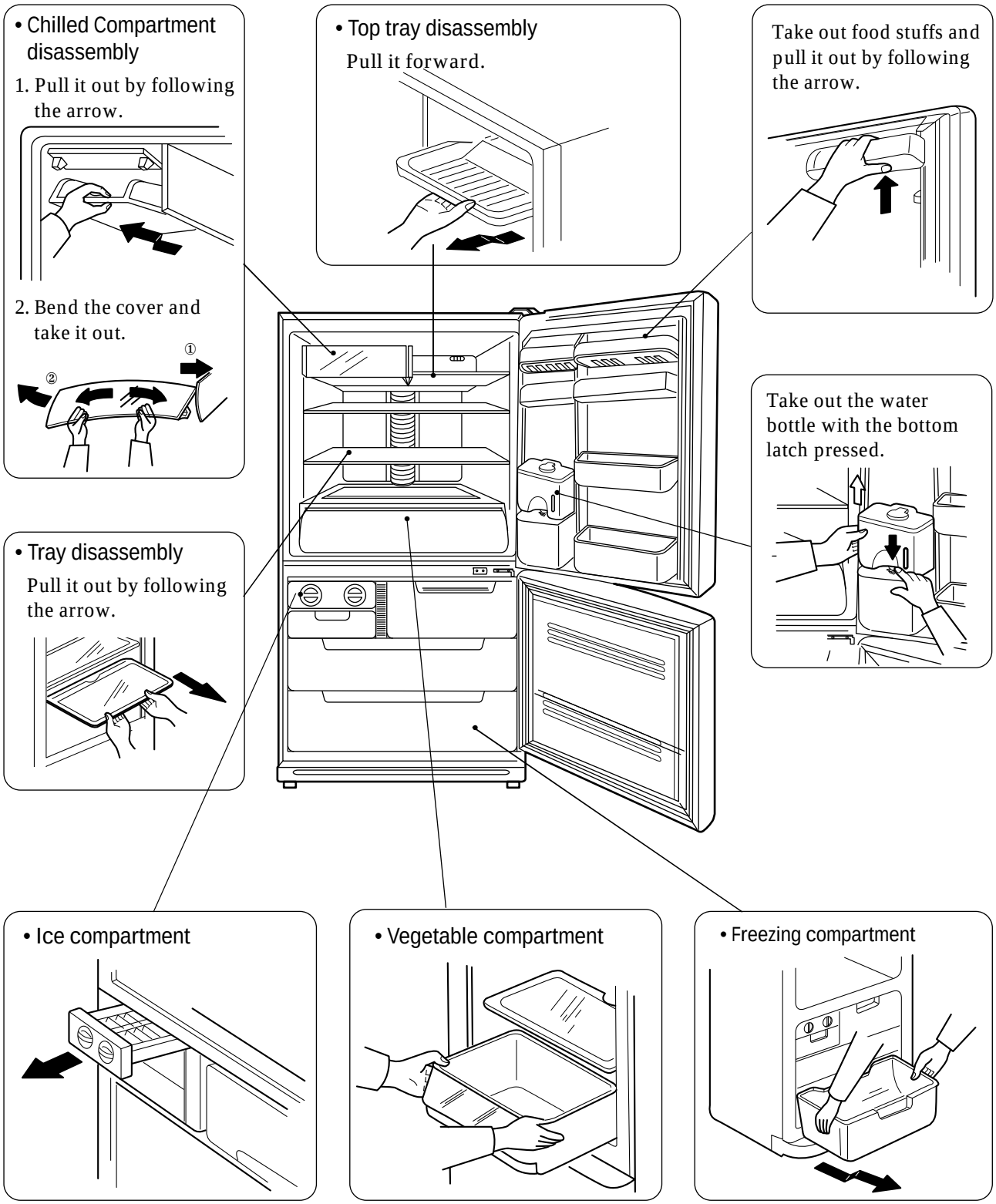
5. Function & Operating Instruction

• 5-1 Product Dimension



MODEL	A	B	C	D	E	Remarks
SRG-L678EV	1750.0	994.5	1509.7	755	667	"X"
SRG-L676EV	1750.0	994.5	1509.7	755	667	"Y"
SR-L628EV	1750.0	994.5	1459.7	715	627	"X"
SR-L626EV	1750.0	994.5	1459.7	715	627	"Y"

5-2 Part Name & Disassembly


• Chilled Compartment disassembly
1. Pull it out by following the arrow.
2. Bend the cover and take it out.
①
②
• Top tray disassembly
Pull it forward.
Take out food stuffs and pull it out by following the arrow.
Take out the water bottle with the bottom latch pressed.
• Tray disassembly
Pull it out by following the arrow.
• Ice compartment
• Vegetable compartment
• Freezing compartment

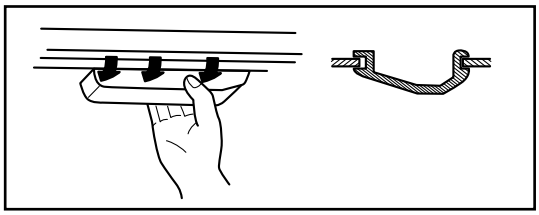
9. Disassembly & Assembly

1. Replacement of refrigerator lamp

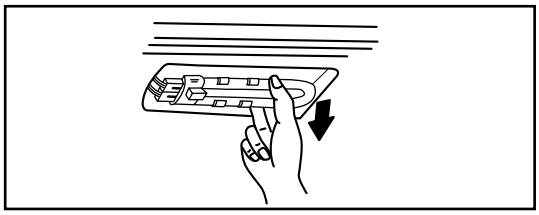
Warning

Always take out the power plug when replacing the refrigerator lamp. There is the danger of electric shock.

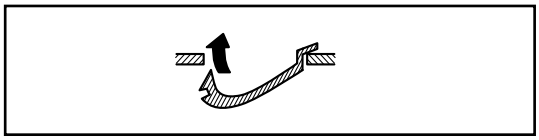
1. Remove the cover with the back latch pressed.



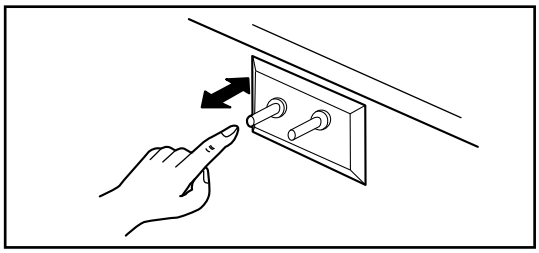
2. Pull out the lamp.



3. After replacing the lamp, assemble the front latch of cover and then connect the back latch.



4. Plug in and check if power is cut off or not by pressing the R-door switch.

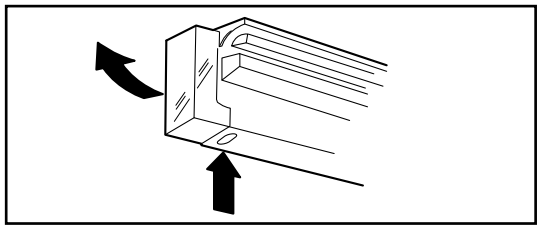


2. Replacement of freezer lamp

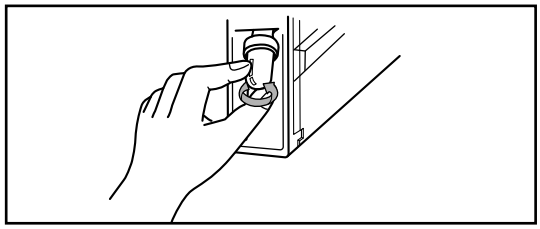
Warning

Always take out the power plug when replacing the refrigerator lamp. There is the danger of electric shock.

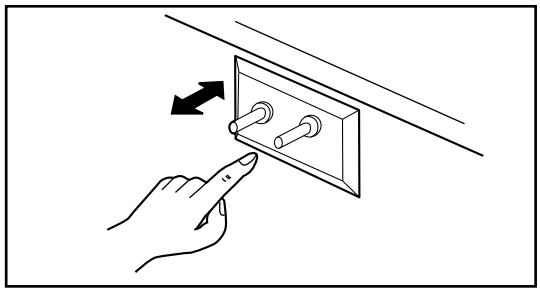
1. Remove the cover by pressing the bottom latch.



2. Replace the lamp by turning it counter-clock wise.

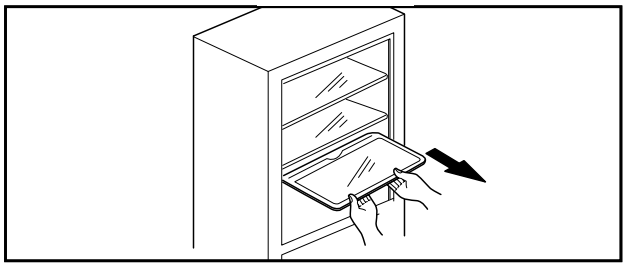


3. Reassemble the cover in the reverse order of disassembly and plug in and the check if power is cut off by pressing the door switch.

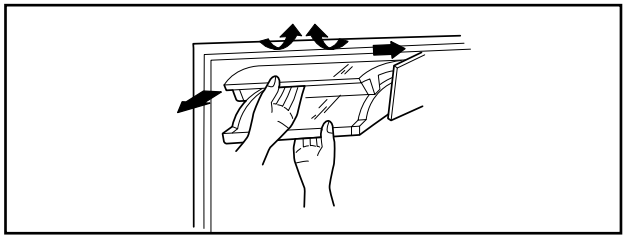


3. Disassembly of the cooling cycle in the refrigeration room

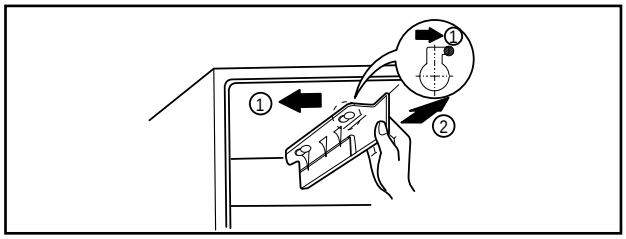
1. Take out food stuffs and trays from refrigeration room.



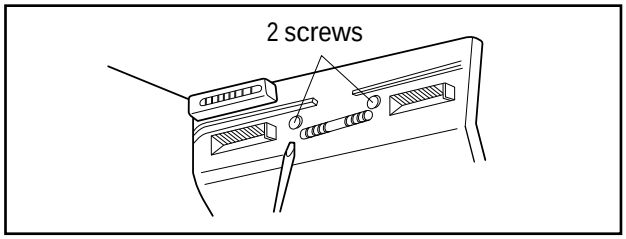
2. Bend the cover of chilled compartment and remove the left axis.



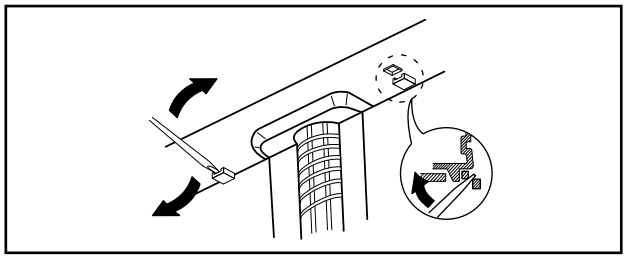
3. Move the holder of chilled compartment to the arrow ① and pull it out.



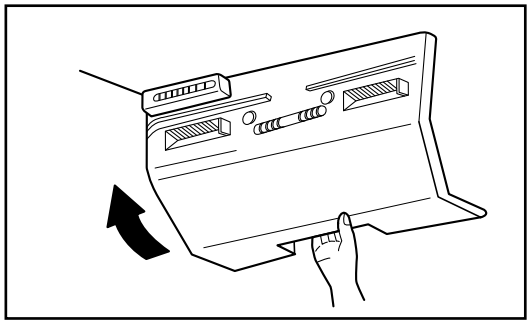
4. Remove 2 cap screws with (–) driver or similar tools.



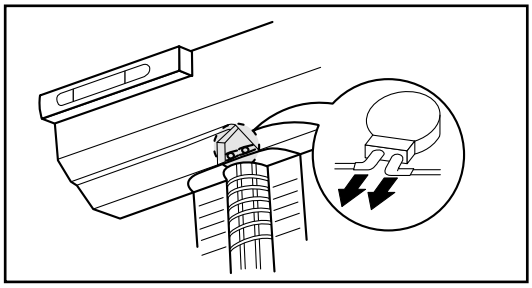
5. Remove 2 latches from the bottom of the cover in the front of evaporator.



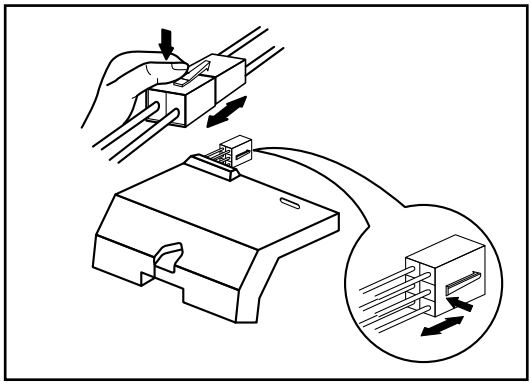
6. Remove the evaporator cover by pulling out the bottom of the evaporator cover.



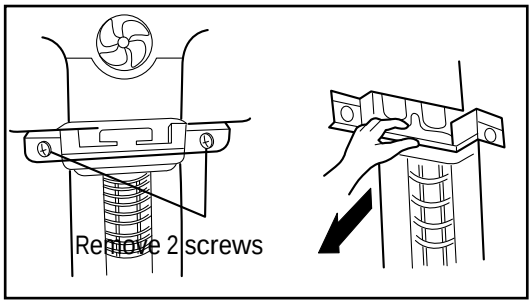
7. Remove the housing of wires from the center of the cooling cycle unit and remove the terminal from the geared motor.



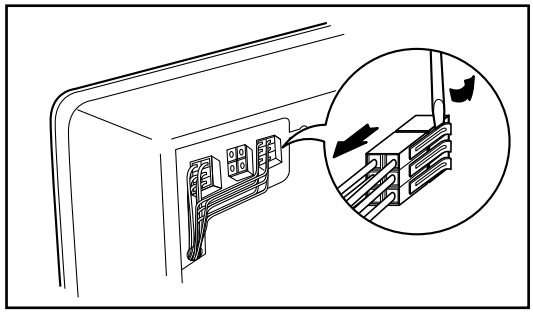
8. Pull forward the insulating material of the cooling cycle unit and remove the wire terminal and insulating material.



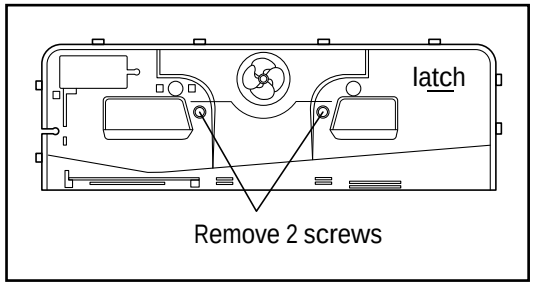
9. Remove 2 screws securing refrigerator duct and pull it out by following the arrow.



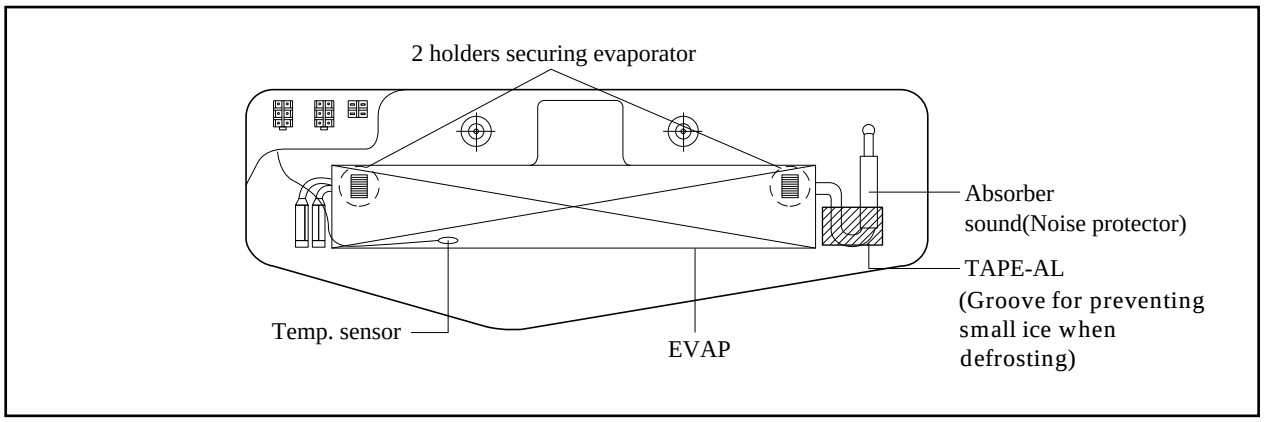
10. Remove the wire terminal from the left top of refrigeration room



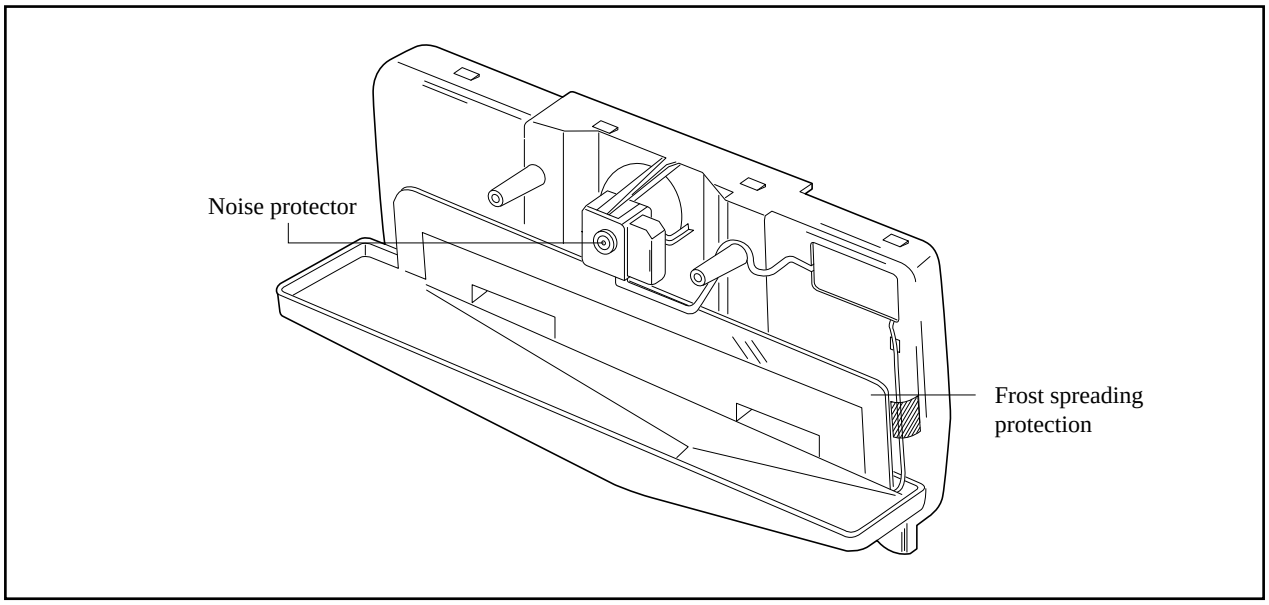
11. Remove 2 screws securing the back cover of cooling cycle unit and remove the left and right latches with (–) driver.



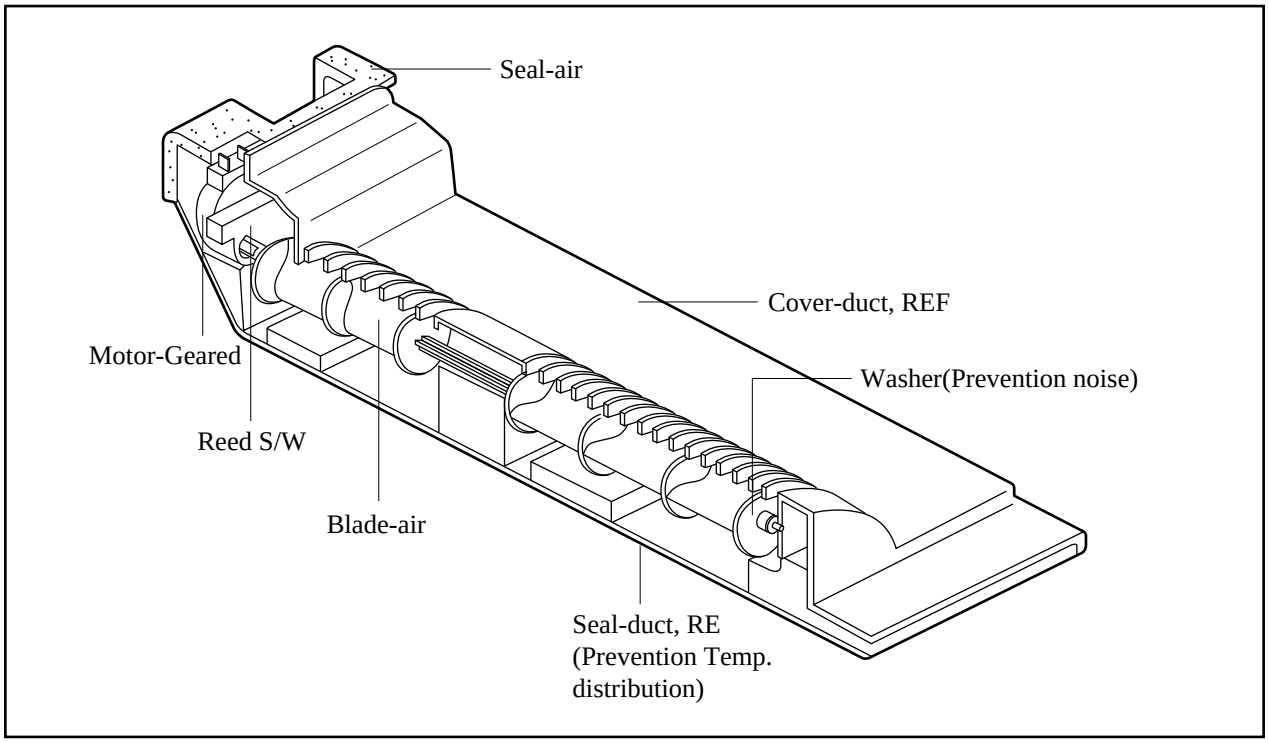
■ Cooling cycle unit assembly in the refrigeration room



■ Cooling cycle unit cover assembly in the refrigeration room

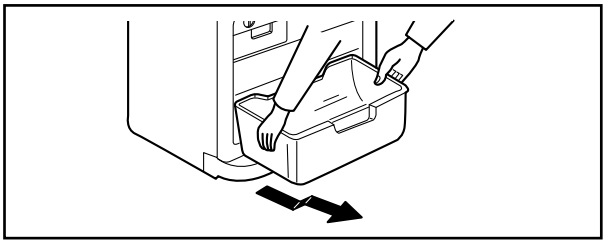


■ Rotating duct assembly in the refrigeration room

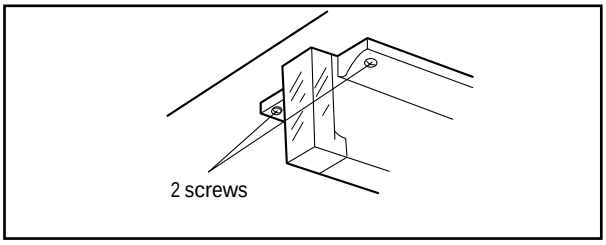


4. Disassembly of the cooling cycle unit in the freezer

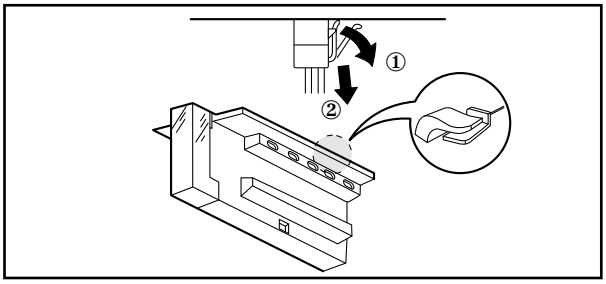
1. Take out the case from the freezer.



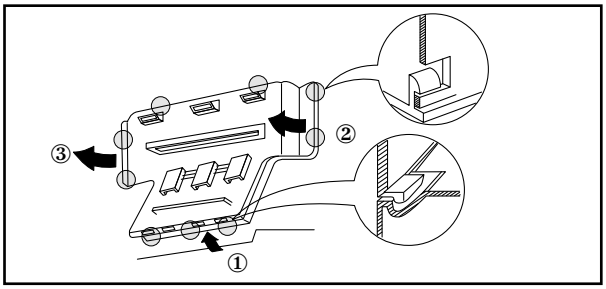
2. Remove 2 screws from the holder of the cooling cycle unit.



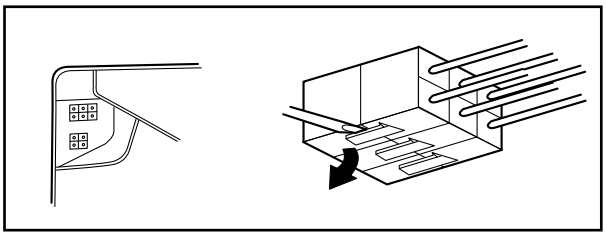
3. Pull out the holder of the cooling cycle unit and disconnect wire terminals.



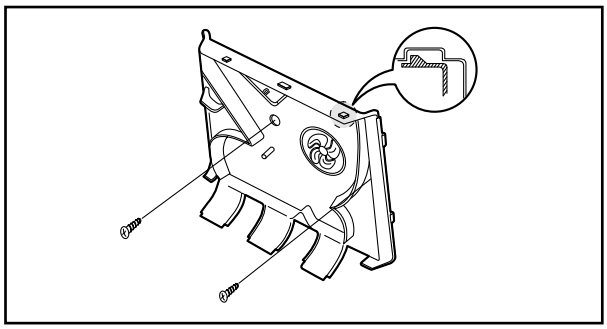
4. Remove the latch of the cooling cycle unit cover from the bottom.



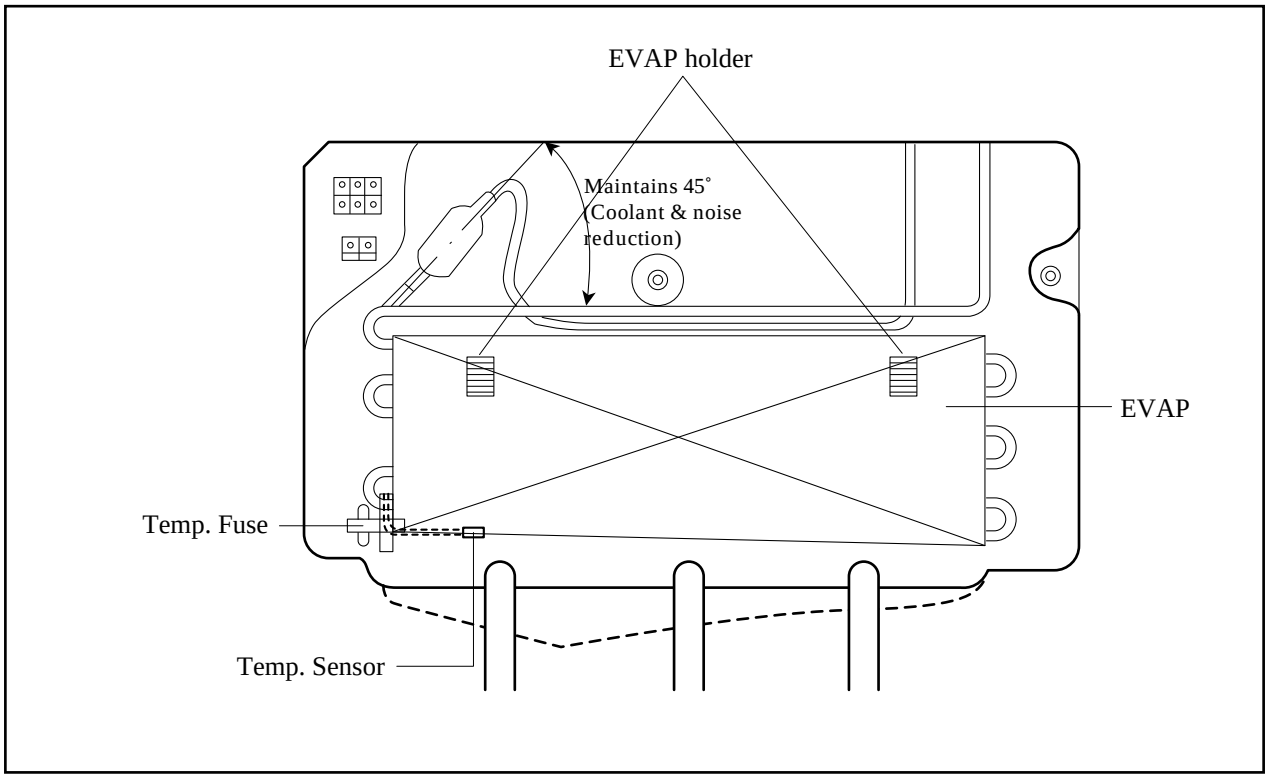
5. Remove each terminal from the top of the left wire assembly.



6. Remove 2 screws from the back cover of the cooling cycle unit and remove the latch with (–) driver.

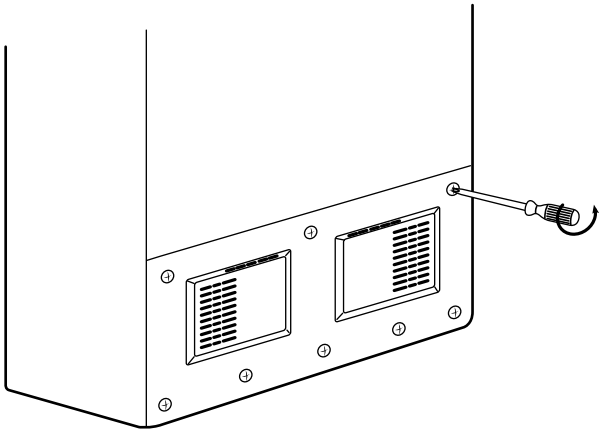


■ Assembly of the cooling cycle unit in the freezer

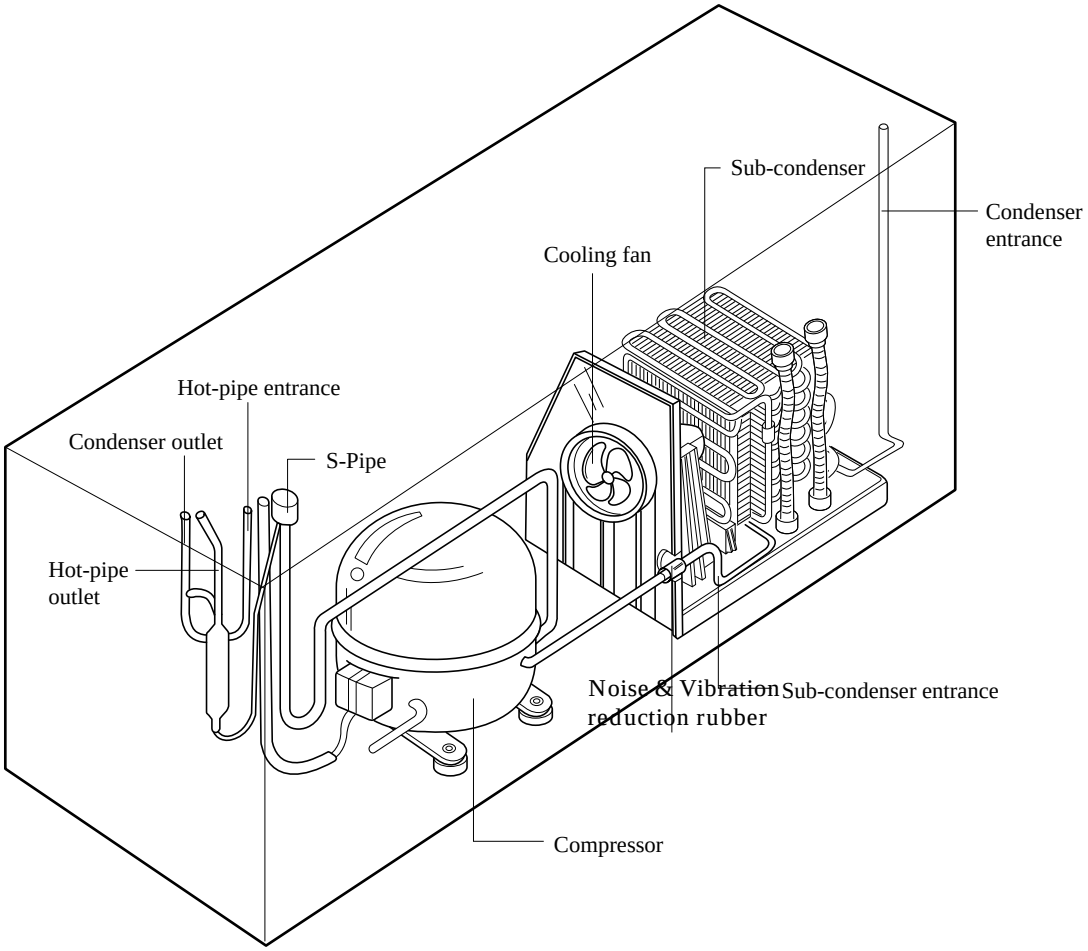


5. Assembly of mechanic compartment in the refrigerator

1. Remove the screws securing the mechanic compartment cover of the back bottom of the refrigerator.



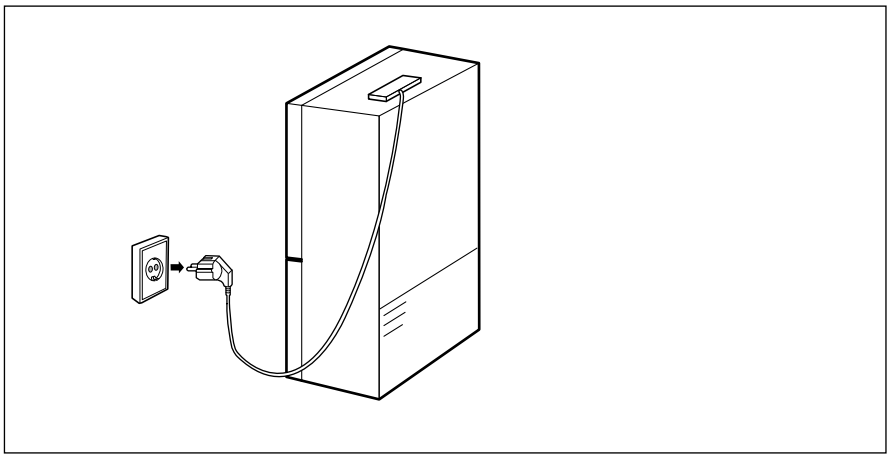
2. Mechanic compartment assembly



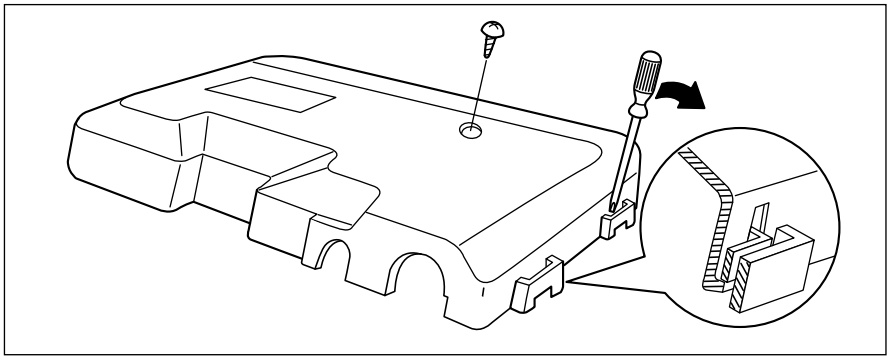
6. Electric box assembly

Warning
Make sure the power plug is taken out when replacing the components for the main PCB.

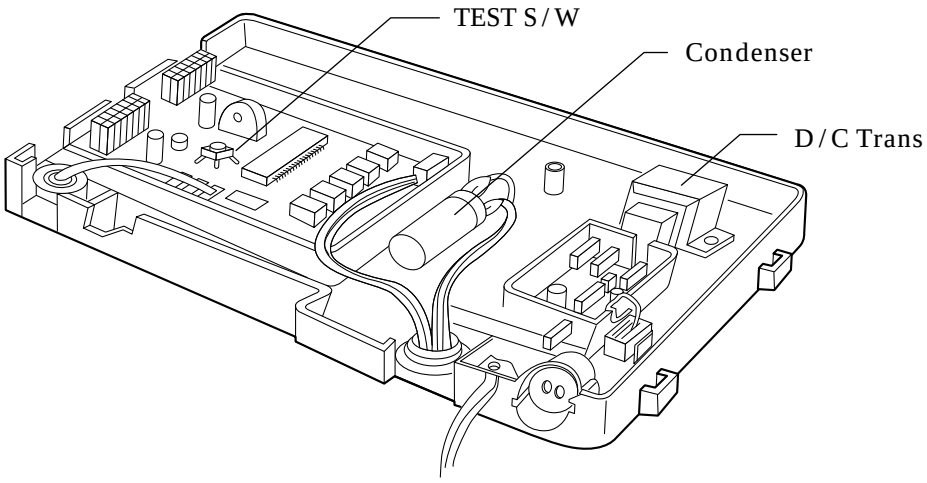
1. Disconnect the power cord.



2. Remove the cover of electrical box with – driver.

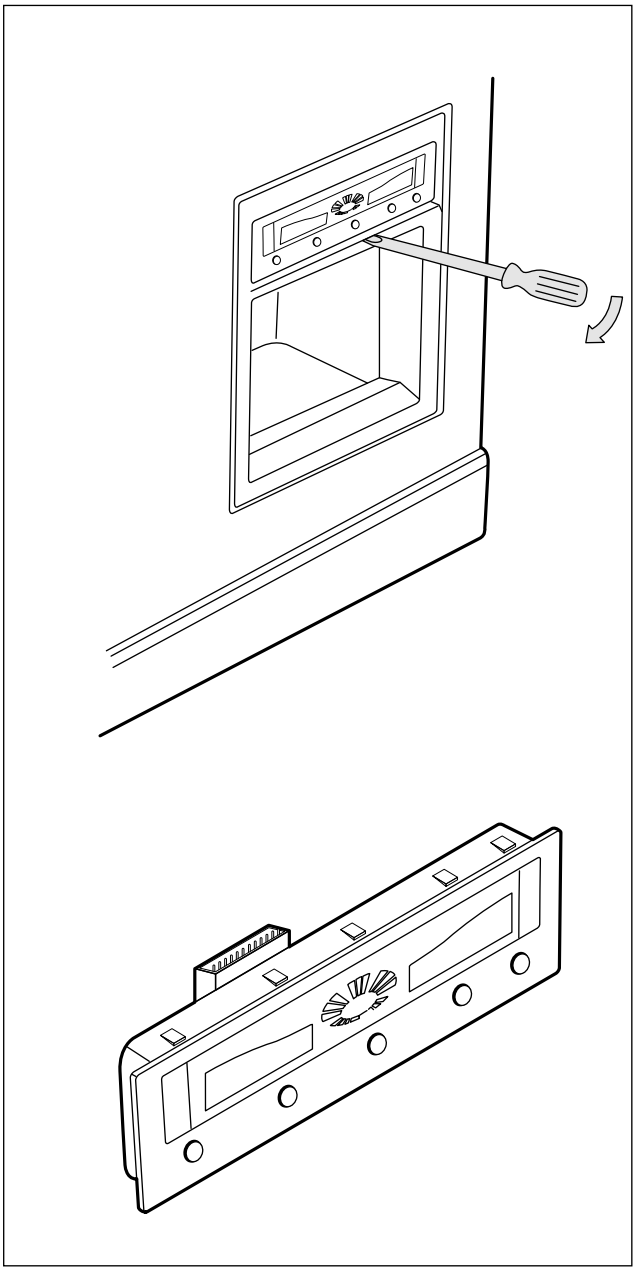


3. Assembly specification of electric box

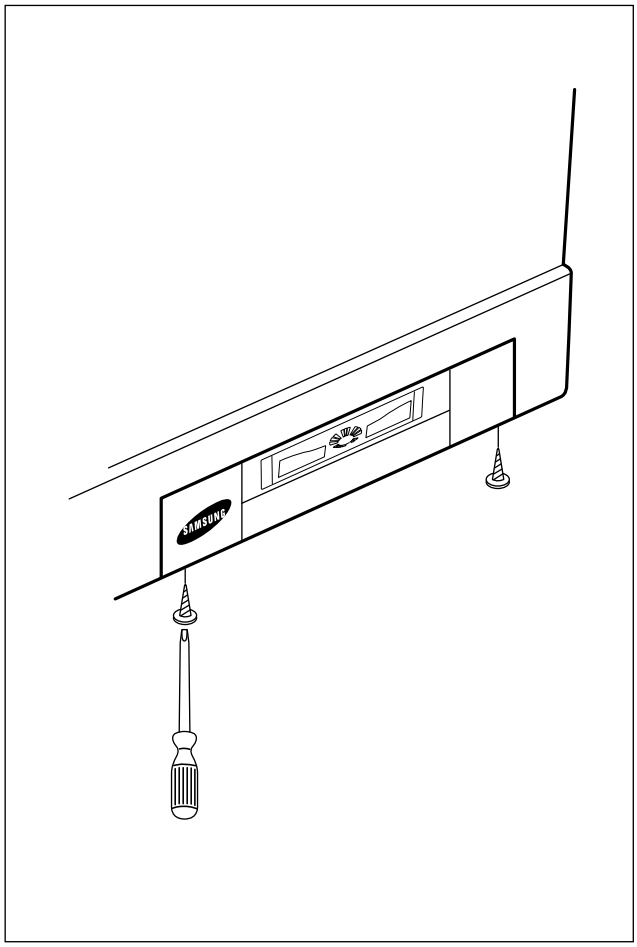


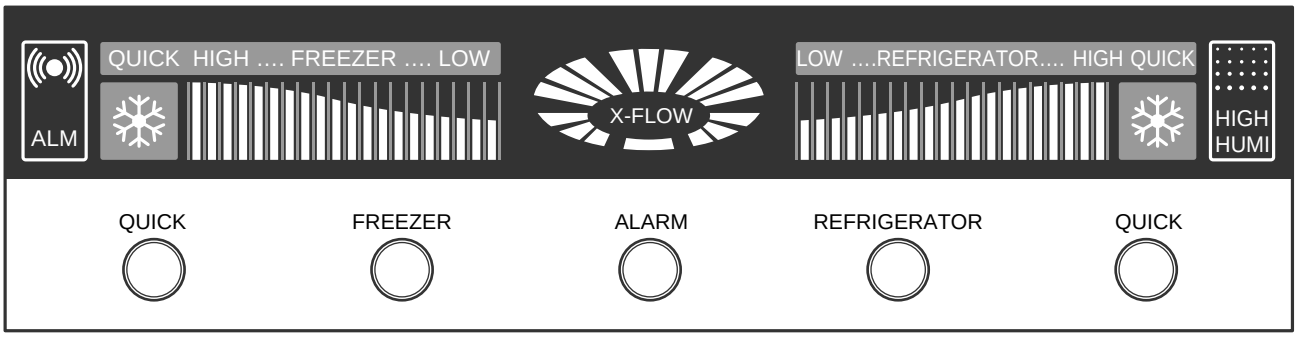
7. Temperature controller disassembly

1. With dispenser model.

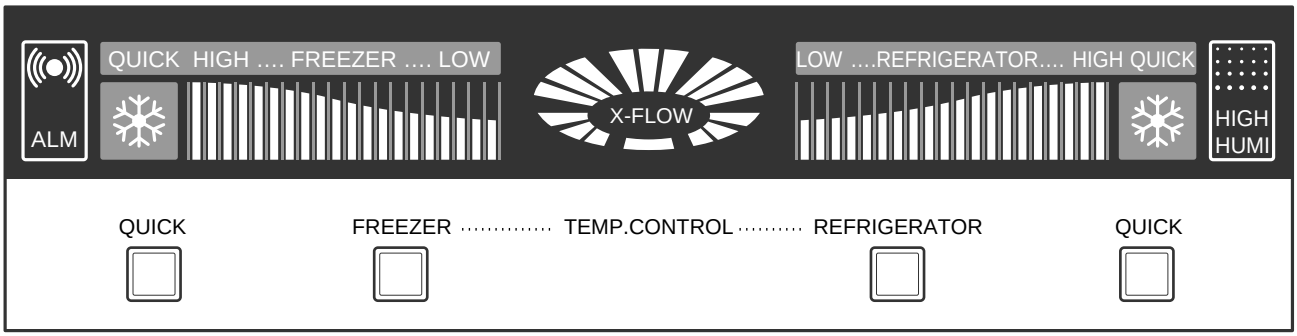


2. Without dispenser model





SR-L628/678EV



SR-L626/676EV

1. Temperature Control Functions

A. Temperature control in the freezing compartment

1) Select the 5 STEPS of 'MED'–'MED · HIGH'–' HIGH'–'LOW'–'LOW · MED' with one button.
2) When-ever the temperature control button of freezer is pressed, it continues to light from "MED" to "LOW · MED".
3) When power turns on "MED" is automatically selected.

Category	Initial power on	Pressed once	Pressed twice	Pressed 3 times	Pressed 4 times	Remark
Indicator Lamp	► MED	►MED·HIGH	►HIGH	►LOW	►LOW·MED	
Reference Temp.	–17.5˚C	–19.5˚C	–21˚C	–15˚C	–16.5˚C	

B. Temperature control in the refrigeration compartment

1) Select the 5 stages of 'MED'–'MED · HIGH'–'HIGH'–'LOW'–'LOW · MED' with a button.
2) Whenever the temperature control button of refrigerator is pressed, it continues of light from 'MED' to 'LOW · MED'.
3) When power turns on "MED" is automatically selected.

Category	Initial power on	Pressed once	Pressed twice	Pressed 3 times	Pressed 4 times	Remark
Indicator Lamp	► MED	►MED·HIGH	►HIGH	►LOW	►LOW·MED	
Reference Temp.	3˚C	1˚C	–1˚C	6˚C	4.5˚C	

C. Power freezing and power refrigeration function

- It is selected by the special power freezing · refrigeration button.
- Whenever the power freezing · refrigeration button is pressed, it repeats turning on and off.
- When power turns on at first, it is selected to off automatically.
- When the power freezing · refrigeration button is selected, the temperatures of freezer and refrigerator do not change. But, the temperatures can be set again after it is selected.

1) Power Freezing Function
   ① If power freezing is selected, COMP and F-FAN operate for 2 and 30 hours.(In 1 minute after selection)
   ② If power freezing function finishes, power freezing lamp turns off.
   ③ If power freezing function is selected, refrigerator is controlled by the fixed notch.

2) Power Refrigeration Function
   ① If it is selected, it continues until COMP and R-FAN reaches to –4˚C.
   ② The power refrigeration finishes if COMP and R-FAN does not reach –4˚C even though 2 and 30 hour operation.
   ③ If it is selected, refrigerator is controlled by the fixed notch.

3) When the power freezing · refrigeration are selected simultaneously
   ① Each function is carried out at the same time.

2. Alarm function

A. Button touch(Ding-Dong Sound)

1) When each button on the control panel is pressed, the beep sounds to confirul the key input.
2) The beep does not sound if wrong-touch.

B. Door open(Ding-Dong Sound)

1) When the door of either freezer of refrigerator is open for more than 2 minutes, the alarm rings.
2) The alarm rings for 10 seconds every one minute. When the door closes, the alarm goes off immediately.
3) Door open alarm rings when the display button is selected. But door open alarm stops immediately if the button is released.
4) If the alarm is selected by the button, the alarm rings regularly.
5) Alarm by the alarm button includes only door open.
6) Model SR-L676EV, SR-L626EV follows the above alarm procedure without alarm select button.

C. Forced starting · Forced defrosting (beep sound)

1) If the forced starting · forced defrosting are selected the beep tone sounds.
2) When forced starting, the beep sounds until being completed(24 hours) or released.
3) When forced defrosting, the beep sounds until being completed(including pause) or released.

3. Defrosting function

A. Quick defrosting function

1) When power turns on at first, the first defrosting is carried out after compressor operates for 4 hours.

B. Standard defrosting function

1) Defrosting is divided into freezer defrosting, refrigerator defrosting and natural defrosting. The defrosting of freezer and refrigerator is determined by the operation time of compressor.
2) Defrosting interval can vary from 6~32 hours.

C. Natural defrosting of Refrigerator

1) Natural defrosting is carried out if the compressor turns off and fan keeps on for some period.

4. Test function

A. Forced starting function

1) The test functions are designed for PCB, product test, process inspection and service activities.
2) The test switch is on the main PCB and when pressed once, it immediately works cooling without comp delay.
3) If the forced starting is selected, freezer and refrigerator notches are selected to “HIGH” and “HIGH”· MED”. Comp and F-Fan are controlled by pull-down and R-Fan is controlled by “HIGH · MED” notch.
4) The pull-down function of forced starting maintains for 24 hours and it returns to normal operation after defrosting(F, R) is automatically carried out.
5) During forced starting, all button inputs are available. Forced starting can be released when power turns on after off or by the test release mode.
6) During forced starting, the beep continues to sound (0.25 sec. ON / 0.75 sec OFF) until defrosting is completed.

B. Forced defrosting function

1) If the test button is pressed once during the forced starting, refrigerator is defrosted forcedly.
2) If it is pressed twice, freezer and refrigerator carry out defrosting at the same time.
3) When the forced defrosting is carried out, the forced starting is released and returns to normal operation.
4) When the forced defrosting is carried out, the notches of freezer and refrigerator maintains the notch fixed prior to forced starting.

C. Test mode release

1) If the test button is pressed twice during forced defrosting, the forced defrosting is canceled and returns to normal operation.
2) If the test release mode is selected, the buzzer will stop.

5. Self-diagnosis function

A. Self-diagnosis function with initial power on

1) If the power is supplied to refrigerator at first, all displays are on and self-diagnosis function is carried out.
2) If there is no defect on MICOM, display returns to the initial normal mode(“Med”–“HIGH humidity”–“Alarm”).
3) If there is defect, the televant display lights off with the sound of the beep.
4) Self-diagnosis error indicator might disappear when defect is repaired or self-diagnosis function is released.
5) If defect is repaired, display returns to normal mode.
6) Self-diagnosis function is canceled when “power freezing” button and “power refrigeration” button are pressed for 5 seconds at the same time. Display returns to normal mode.

B. Self-diagnosis function during normal operation

1) Press “power freezing” button and “power refrigeration” button for 5 seconds at the same time during normal operation.
2) The temperature LEDs of freezer and refrigerator repeats 1 second on / off 3 times.
3) If any button is not pressed until the temperature LED repeats on / off 3 times, self-diagnosis function is carried out. If there is no defect, it returns to normal mode.
4) If there is defect, the corresponding display will light up and buzzer will beep.
5) Self-diagnosis error indicator works for 30 seconds and returns to normal mode regardless of defect correction.
6) Key input is not available during self-diagnosis function.
7) When there is defect, the corresponding display is shown as initial power on.

No	Item	Display LED	Symptom	Remark
1	R1-Sensor	Refrigerator “LOW”	• R-room left sensor housing disconnection. • Faulty connection. • Wire open or short. • Faulty sensor.	R1-Sensor temperature is over +50˚C or below –50˚C.
2	R2-Sensor	Refrigerator “LOW · Med”	• R-room left right sensor housing disconnection. • Faulty connection. • Wire open or short. • Faulty sensor.	R2-Sensor temperature is over +50˚C or below –50˚C.
3	RD-Sensor	Refrigerator “Med”	• R-room defrost sensor housing disconnection. • Faulty connection. • Wire open or short. • Faulty sensor.	RD-Sensor temperature is over +50˚C or below –50˚C.
4	Air-Sensor	Freezer “LOW”	• Outer sensor housing disconnection. • Faulty connection. • Wire open or short. • Faulty sensor.	Outer-Sensor temperature is over +50˚C or below –50˚C.
5	F-Sensor	Freezer “LOW” · Med”	• F-room sensor housing disconnection. • Faulty connection • Wire open or short. • Faulty sensor.	F-Sensor temperature is over +50˚C or below –50˚C.
6	FD-Sensor	Freezer “Med”	• R-room defrost sensor housing disconnection. • Faulty connection. • Wire open or short. • Faulty sensor.	F-Sensor temperature is over +50˚C or below –50˚C.
7	Geared-Motor	Refrigerator “HIGH”	• Faulty geared-motor • Faulty reed-switch housing disconnection. • Faulty connection.	Square wave not detected by reed-S/W.

(Self-diagnosis Display Table)

C. Load status display

1) When “power freezing” button and “power refrigeration” button are pressed for 5 seconds during normal operation, it is activated by the refrigeration button while temperature setting display repeats on / off 3 times.
2) Load which output of micom is displayed on LED.
3) Load status display maintains for 60 seconds and returns to normal operation.

No	Item	Display LED	Display
	Freezer Subordinate		
1	COMP	Freezer “LOW”	Relevant LED ON during comp operation
2	F-FAN	Freezer “LOW · Med”	Relevant LED ON during F-FAN operation
3	Freezer defrost Heater	Freezer “Med”	Relevant LED ON during freezer defrost heater on
4	Freezer bulb	Freezer “Med · HIGH”	Relevant LED ON during freezer bulb ON
	Refrigerator Subordinate		
5	R-FAN	Refrigerator “LOW · Med”	Relevant LED ON during F-FAN operation
6	Refrigerator defrost Heater	Refrigerator “Med”	Relevant LED ON during refrigerator defrost
7	Refrigerator bulb	Refrigerator “Med · HIGH”	Relevant LED ON during refrigerator bulb ON
8	GEARED-Motor	Refrigerator “HIGH”	Relevant LED ON during refrigerator brade rotation
	Mode Display		
9	Initial Mode	Quick Freezing	Relevant LED ON with initial power input
10	Overload	Quick Refrigeration	Relevant LED ON when ambient temperature is over 35˚C
11	Low temp.	High humidity refrigeration	Relevant LED On when ambient temperature is below 20˚C

(Load Status Display Table)

6. Option function

1) Freezer Temperature Shift (Unit ˚C)

SHIFT	14	13	12	11	SHIFT	14	13	12	11
Reference	0	0	0	0	+0.5	1	0	0	0
-0.5	0	0	0	1	+1.0	1	0	0	1
-1.0	0	0	1	0	+1.5	1	0	1	0
-1.5	0	0	1	1	+2.0	1	0	1	1
-2.0	0	1	0	0	+2.5	1	1	0	0
-2.5	0	1	0	1	+3.0	1	1	0	1
-3.0	0	1	1	0	+3.5	1	1	1	0
-3.5	0	1	1	1	+4.0	1	1	1	1

2) Refrigerator Temperature Shift (Unit ˚C)

SHIFT	18	17	16	15	SHIFT	18	17	16	15
Reference	0	0	0	0	+0.5	1	0	0	0
-0.5	0	0	0	1	+1.0	1	0	0	1
-1.0	0	0	1	0	+1.5	1	0	1	0
-1.5	0	0	1	1	+2.0	1	0	1	1
-2.0	0	1	0	0	+2.5	1	1	0	0
-2.5	0	1	0	1	+3.0	1	1	0	1
-3.0	0	1	1	0	+3.5	1	1	1	0
-3.5	0	1	1	1	+4.0	1	1	1	1

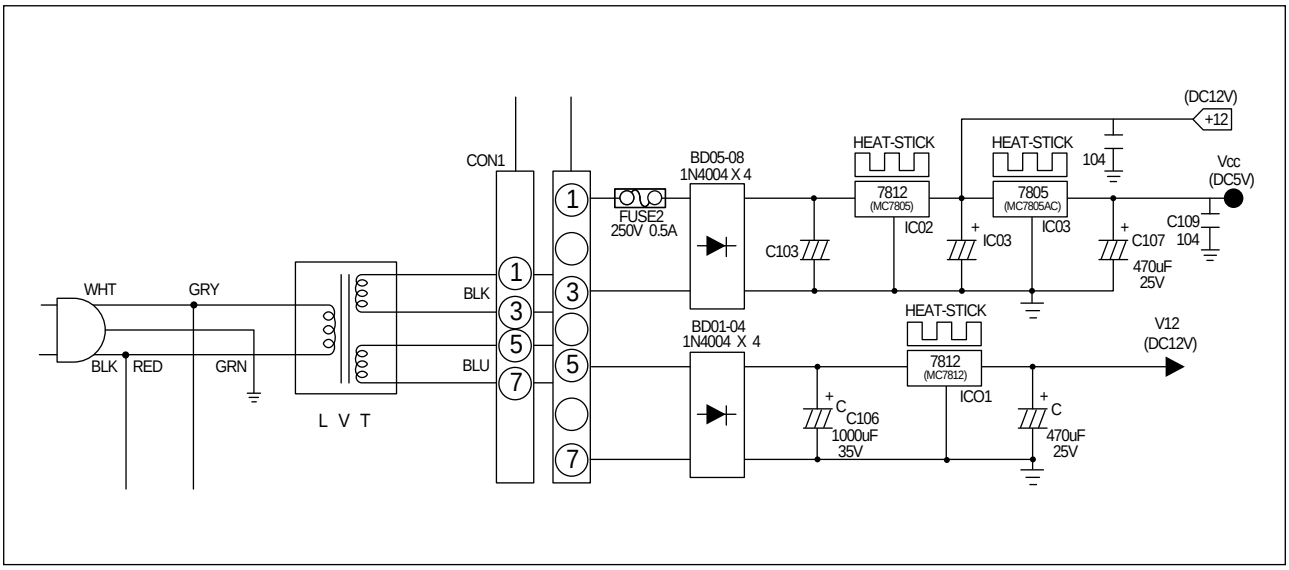
1) Method : • The temperature of the freezer and refrigerator can be compensated from +4.0 to –3.5˚C.
• Reference : Freezer (–17.5˚C)
Refrigerator(+3.0˚C)

As above table • Shift No 1, 2, 3, 4 are designed to compensate freezer temperature (PCB D601, D602, D603, D604)
• Shift No 5, 6, 7, 8 are designed to compensate refrigerator temperature (PCB D605, D606, d607, D608)
• “0” means non-diode (IN4148)
“1” means diode

✻ Temperature is compensated with power input after diode connects to the option table.

6. Circuit Descriptions

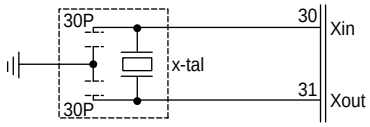
1. Power circuit



Voltage	Circuit used
+12 (DC 12V)	Relay Operation
Vcc (DC 5V)	Power around MICOM & Sensor Detector
V12 (DC 12V)	LED Display & S/W Detector

The input AC voltage of DC-trans secondary registers 15V at CON1 between ①~③. The rectified voltage passed through BD05 ~ 08 becomes DC 12V through voltage regulator MC7812(IC02). The power(DC12V) is supplied to the relay operation power block. Then, DC 5V is genetatel and supplied to the power around micom and sensor detector through 7805(IC03).
The rectified voltage passed through BD01~04 passes through 7812(IC01). Then, DC12V is supplied to LED display and switch detector.

2. Oscillator

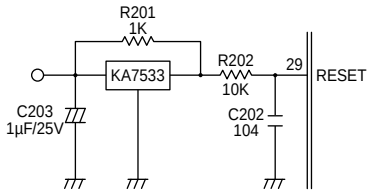


Port	Oscillating Frequency
Xin	4.00MHz
Xout	4.00MHz

±0.5% Error

It is designed for clock generation and time calculation for synchronizing transmission and reception on the logic elements inside the MICOM. If the X-TAL specification changes, MICOM may make an error. The standard components should be used.

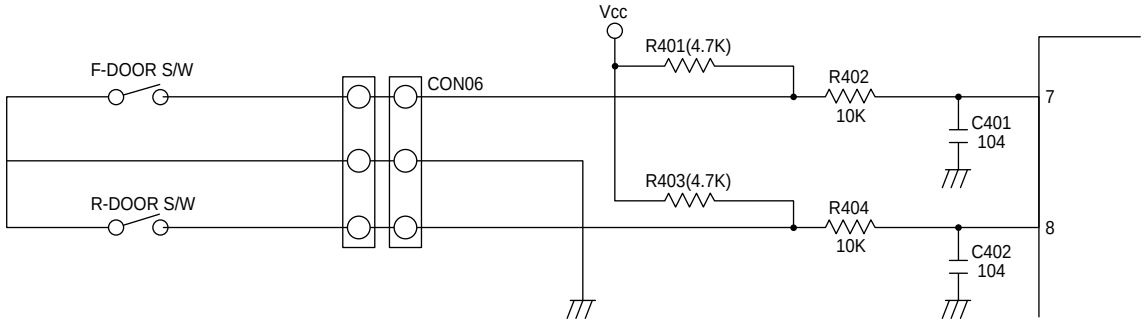
3. Reset Circuit



Port	Voltage
Xin	5V
Xout	5V

When power is supplied to MICOM, reset circuit initializes RAM and other parts on MICOM to initialize all programs. Reset voltage maintains “low” for hundreds of µsec comparing to MICOM Vcc voltage when power is input. It also maintains “high”(5V) during normal operation. But, when Vcc drops to 3.3V, reset port becomes “low”.

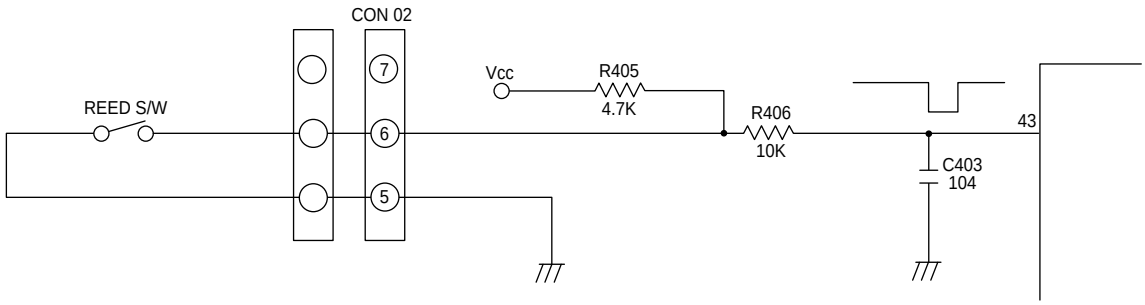
4. Door S/W Detector



DOOR	Door Conditions	Door S/W Contact	MICOM PIN NO	Micom Input Voltage
F	CLOSE	OPEN	# 7	“LOW”
	OPEN	CLOSE		“HIGH”
R	CLOSE	OPEN	# 8	“LOW”
	OPEN	CLOSE		“HIGH”

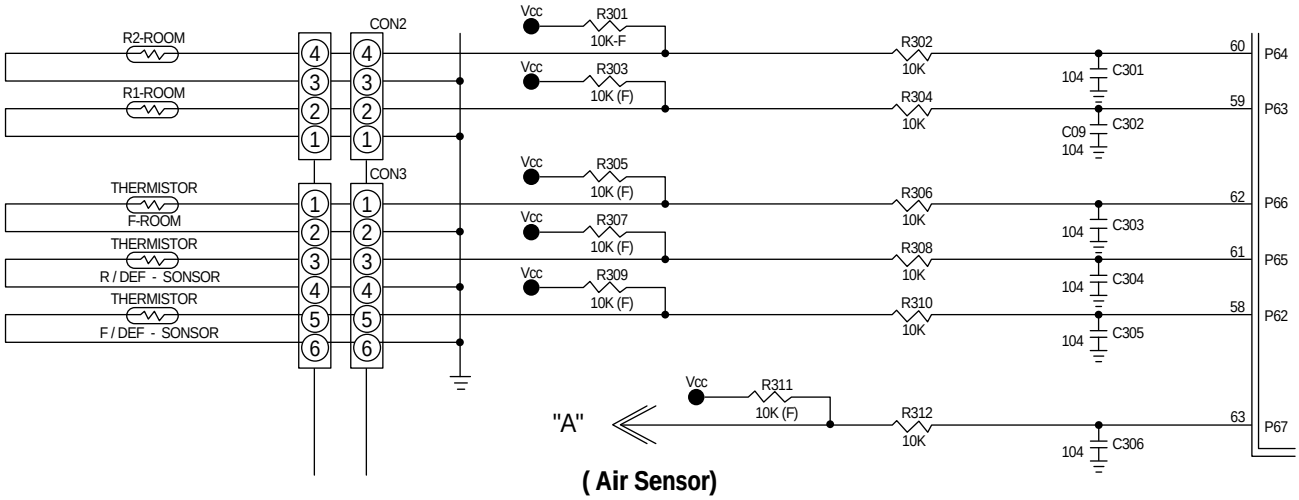
1) If door is open, door S/W contact is closed. Then MICOM receives “low” signal and detects door open.
2) If door is closed, door S/W contact is open. Then MICOM receives “high” signal and detects door close.

5. “V” Motor Position Detector(Reed S/W)



1) The position of “V” motor for controlling the G.A–fuzzy of the temperature in the refrigeration room is detected by the reed switch.
2) When MICOM Pin 43 changes ‘high’ to ‘low’ by the operation of fan, MICOM detects the position of “V” motor.

6. Temperature Sensor



(Air Sensor)

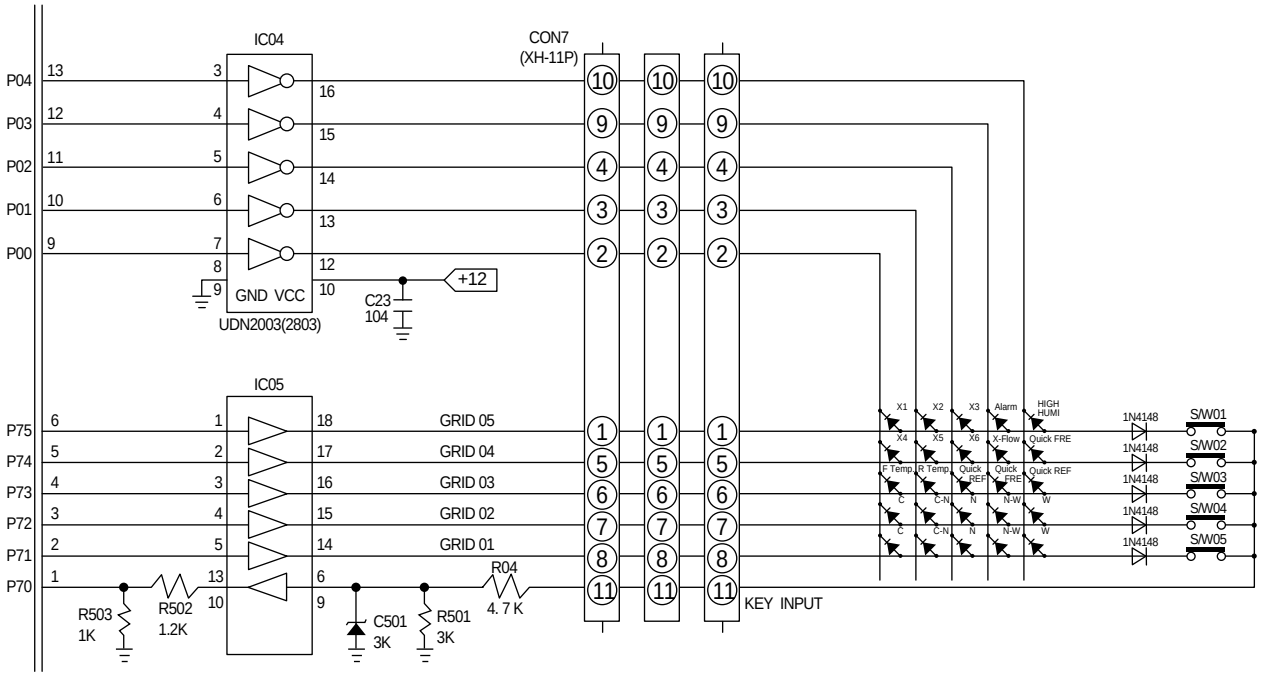
When Sensor is open	When sensor is cut off
MICOM input “HIGH”	MICOM input “LOW”

1) The sensor uses the characteristics of thermistor. If temperature goes higher, resistance goes lower. On the contrary, if temperature goes lower, resistance goes higher.
2) MICOM input voltage is counted by sensor as follows.

$$V_F = \frac{R_{TH}}{R_{TH} + R_{24}} \times V_{CC}$$ (V_{CC} : 5V, R_{TH} : Sensor reisitance)

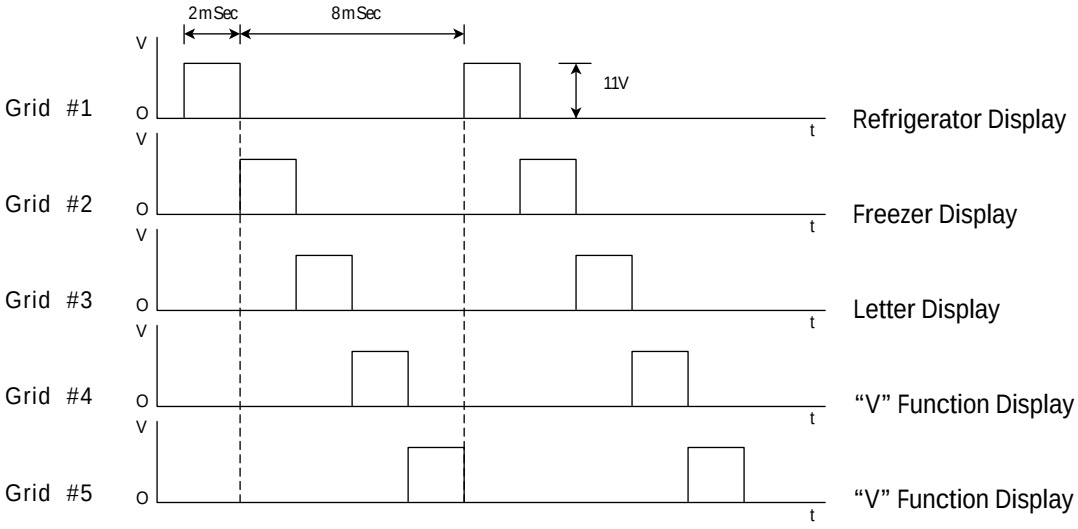
3) For the resistance information on temperature and MICOM input voltage, please refer the conversion table. (Page. 41)

7. Key scan and display circuitry



1) Key scan and display operation

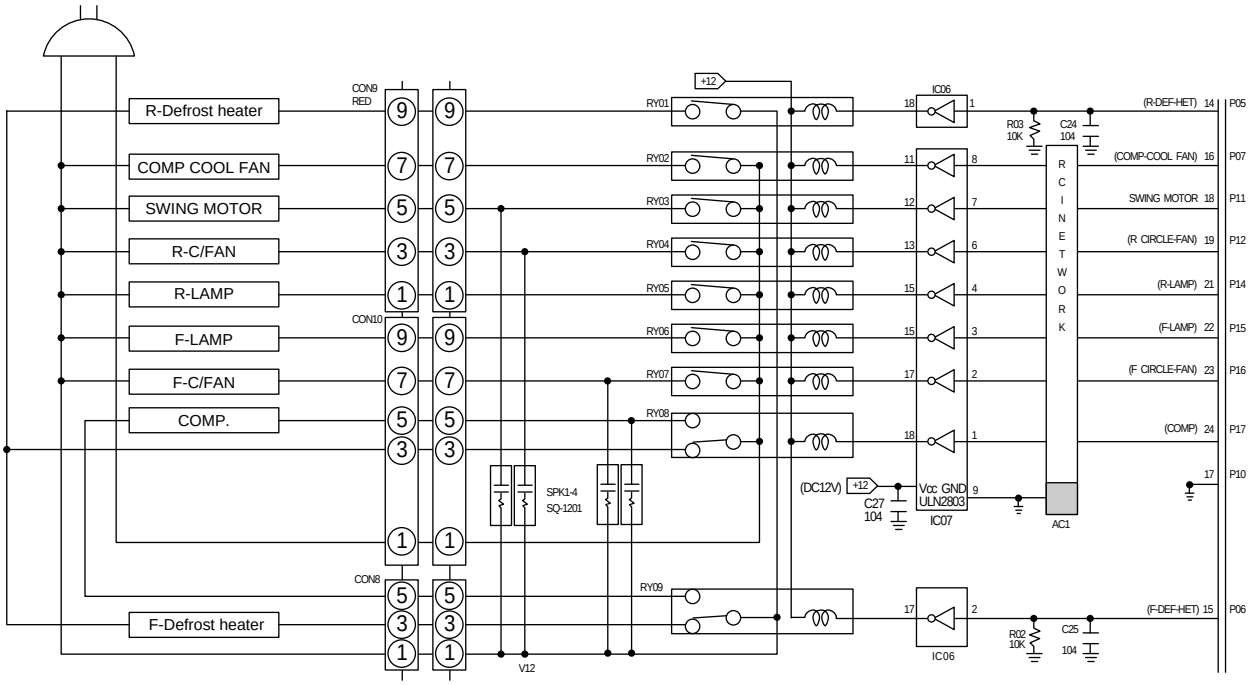
As shown in the following waveform, MICOM pins #2 ~ #6 output are high for 2msec per 10msec. MICOM pin #2 → #3 → #4 → #5 → #6 output repeats. The signal is output through IC05(UDN 2981A). At that time, the peak to peak voltage of square signal registers around 11V. The grid #1 ~#5 waveforms are as follows.



2) Key Scan

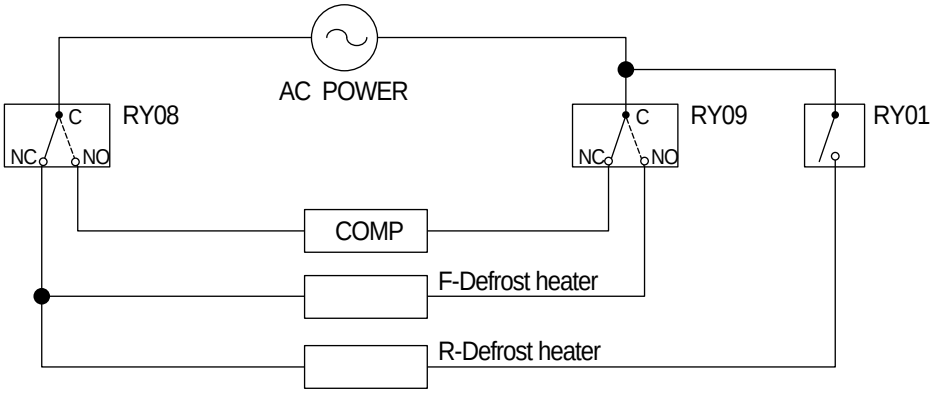
The grid waveform of each output is supplied to each button line through switching diode (IN4148). The grid #1 signal goes to the setting button of refrigerator. Then, refrigerator button is pressed, around 4.5V goes to IC05(UAN2981A) pin 8 through key input line. MICOM detects the refrigerator button pressed after MICOM pin1 receives the signal.

8. Load Operation



If MICOM outputs “high” signal to driver-IC(ULN 2803) according to each load operation conditions, IC turns on and DC 12V flows to ground through the relevant relay coil. Then, core is magnetized by the coil current, and relay contact switches on. When relay contact is on, AC POWER is supplied to the relevant operation load, then which will be activated. If MICOM outputs “low” signal, load operation stops with the relevant relay contact off.

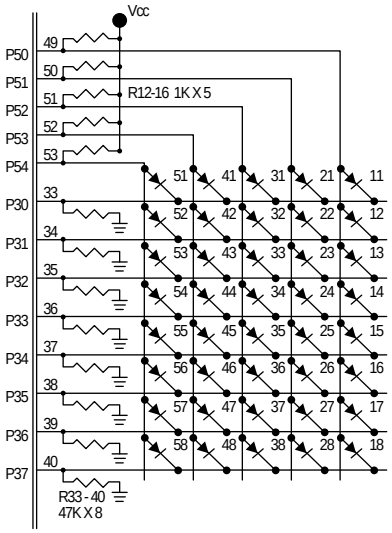
1) Compressor and Defrost Heater



As above block diagram, the commons of compressor relay(RY 08) and defrost heater relay(RY 09, RY 01) are respectively connected to AC POWER line. If relay is not activated(OFF) contact maintaills NC, and compressor and defrost heater are all off, activated and contact is switched on. Then, AC POWER is supplied to compressor activated. On the contrary, if defrost heater relay operates, defrost heater is activated. Compressor and defrost heater do not operate simultaneously under any conditions of relay.

RELAY		Load	Remark
COMP	Defrost H		
on	off	Comp Operation	Defrost-Heater Power Off
on	on	Comp off, Defrost-Heater Off	
off	on	Defrost-Heater On	Comp Power Off
off	off	Comp Off, Defrost-Heater Off	

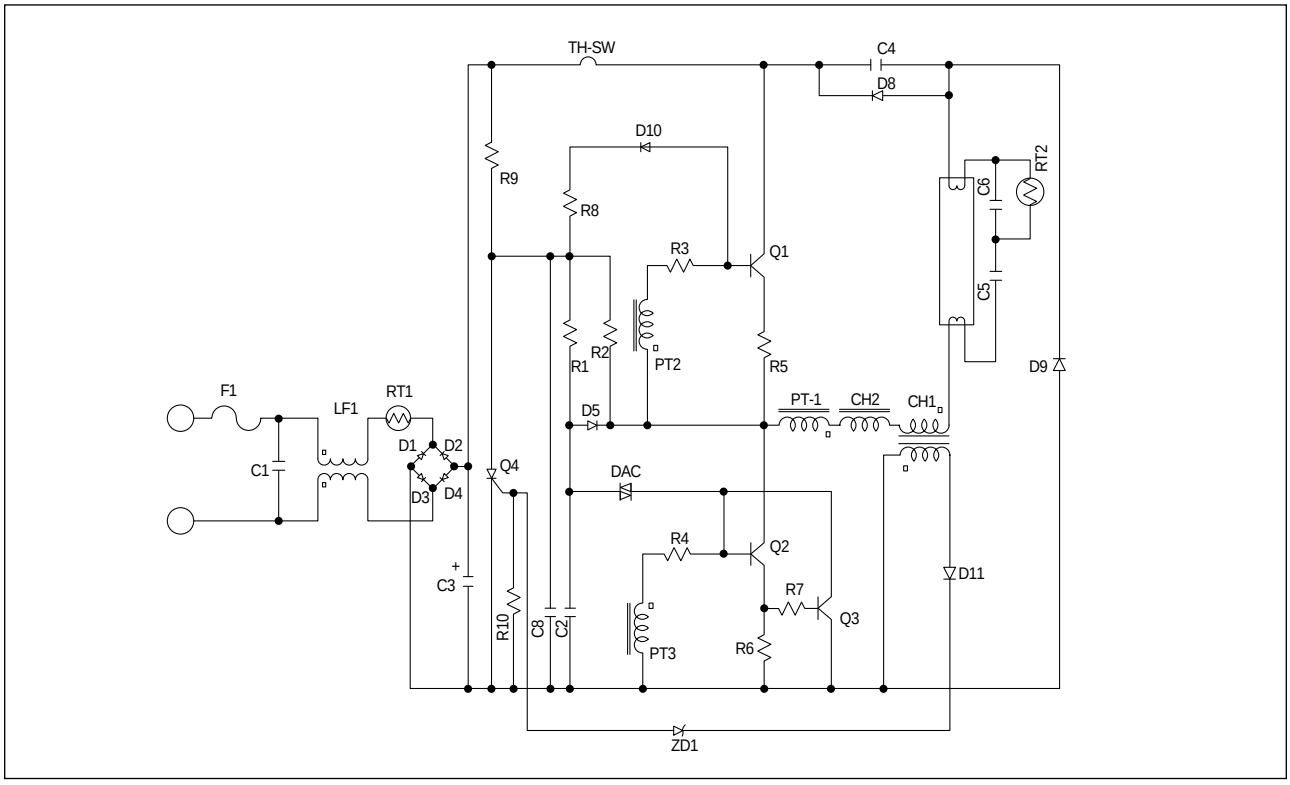
9. Other option functions



Temperature and function values are changeable by using main PCB switching diode.

• Note : If possible, do not change be cause the values have been set in factory. When changing option functions, power should be turned off.
(Only initial power-on allows reading option function)

10. PCB Sub Ass'y(Inverter PCB)



1) Power circuit

PCB sub ass'y (Inverter PCB) is activated with AC POWER input when the refrigerator door is open and R-lamp relay(RY05) is activated. If the AC POWER is supplied to the power block, the smooth capacitor(C3) gets around VOLTAGE DC(VOLTAGE AC X 2) AC POWER through rectification.

2) Lamp

If power is supplied to the PCB sub ass'y, diac(DB4) is activated. When C4 is over 35C / DC, voltage is supplied to TR Q2 base by the continuity of diac. Then, TR Q2 is activated.
When TR Q2 is activated, current flows to C5 – C6 – CH1 – PT1 – R9. At that time, current flows to PT2 and PT3.
If the discharge of capacitor C6 is completed, reverse current flows to PT2 and PT3 and TR Q2 turns off TR Q3 turns on. The current flows to PT1 – CH1 – C6 – C5 – C8.
Lamp light up by the repetition of TR Q2, Q3 on / off. Its frequency range is 30~40KHz during on / off.

3) PTC and PTC protector

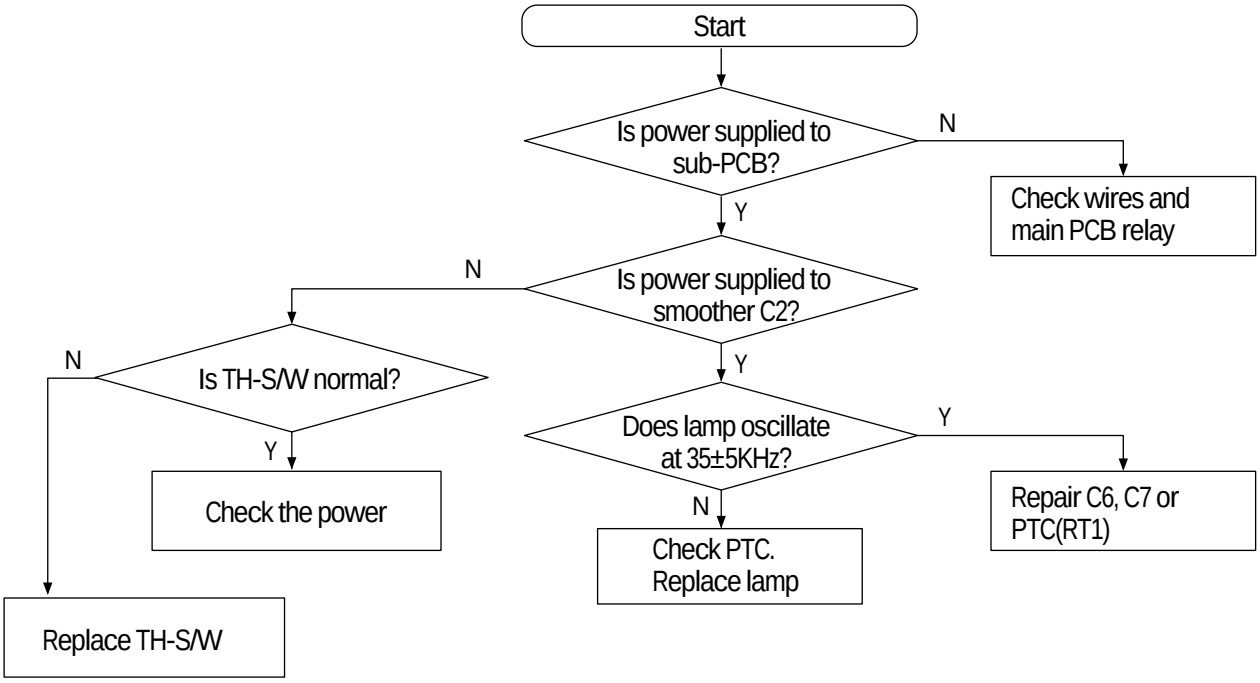
PTC is designed to smooth the lighting and to lengthen lamp's life by heating filament of lamp. The PTC protector prevents damage from PTC by cutting off power through triac if filament emits high voltage at the beginning of lighting.
To check the PTC, measure resistance (150Ω ± 25% is normal). But, PTC resistance can be challged by the ambient temperature and PTC operation. The above resistance value is counted in 20 sec after lamp is off with the temperature 25˚C.

4) Troubleshooting

Precautions

1. Is the power cord well connected to wall outlet?
2. Be careful of high-voltage discharge because high voltage DC power is supplied to SUB-PCB.

① When the light dosen't come on in the refrigerator



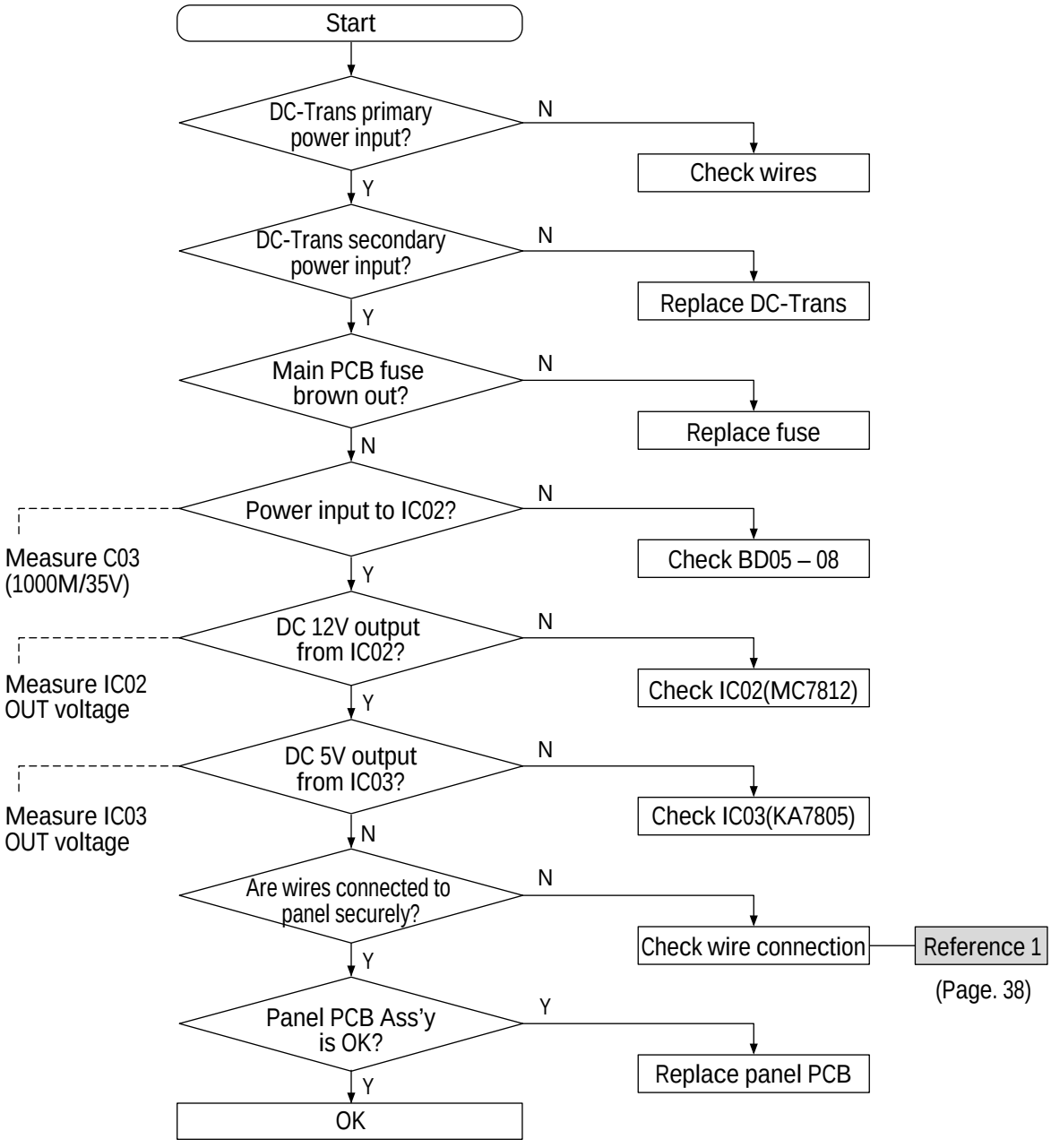
* PTC should be inspected before replacing lamp.
* Be careful of high voltage discharge, when repairing unit.

7. Troubleshooting

Precautions

1. Is the power cord well connected to wall outlet?
2. Refer to the reference

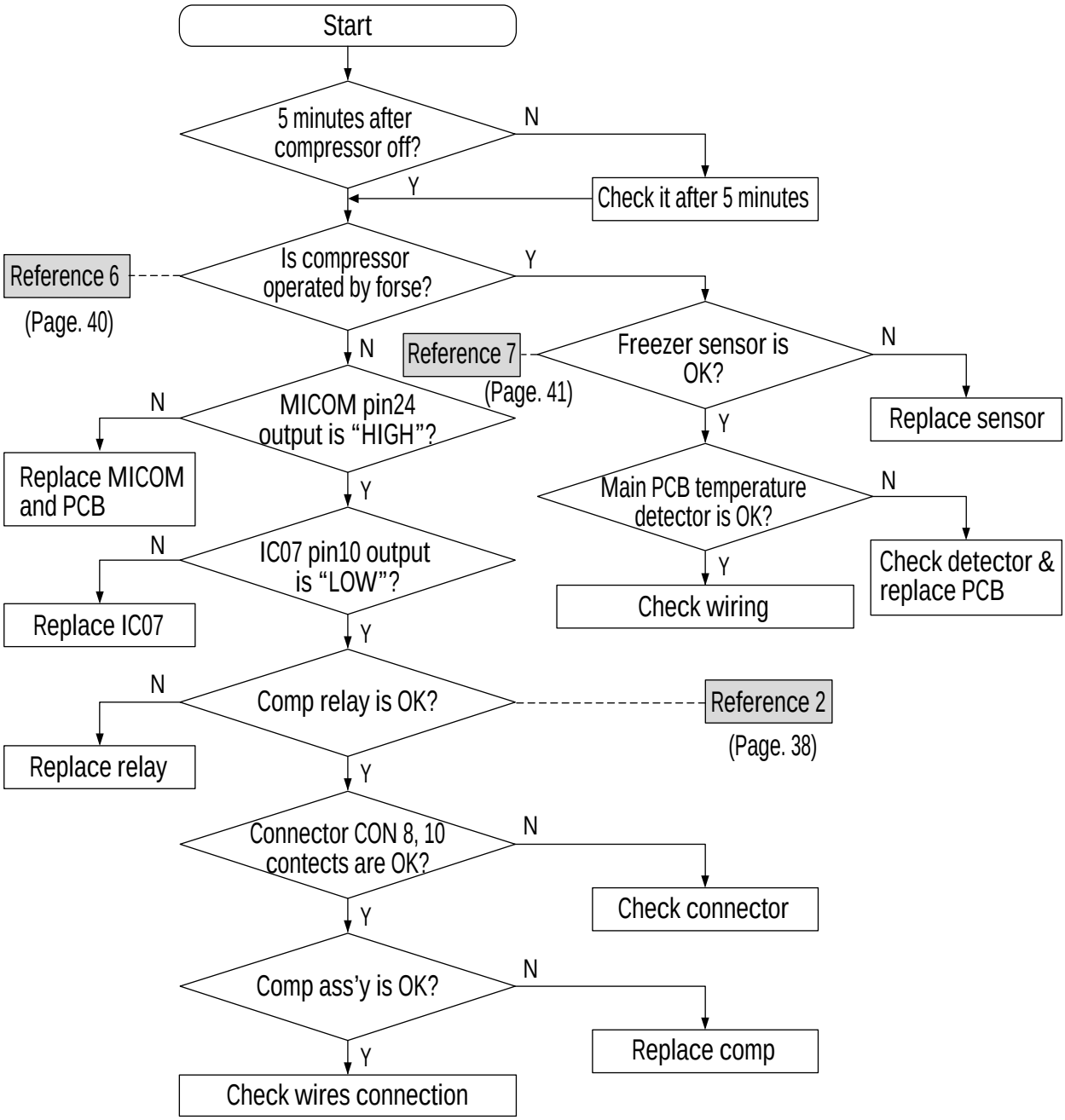
1) No power



2) Compressor does not run

Precautions

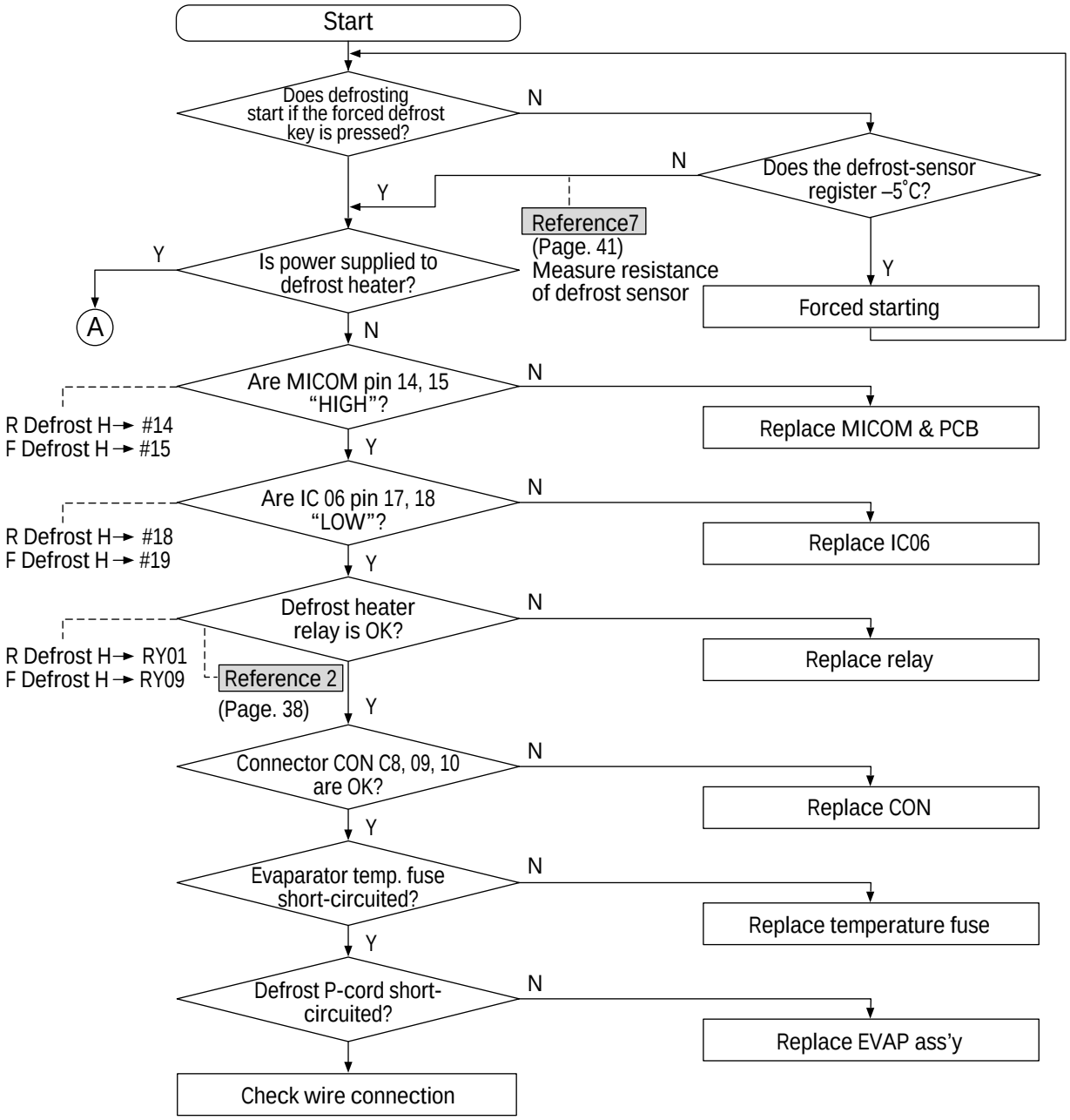
1. Compressor does not operate in 5 minutes after power ON and compressor OFF.
2. Compressor does not run during defrosting.
3. Compressor does not run because low temperature is detected if freezer sensor is not connected.

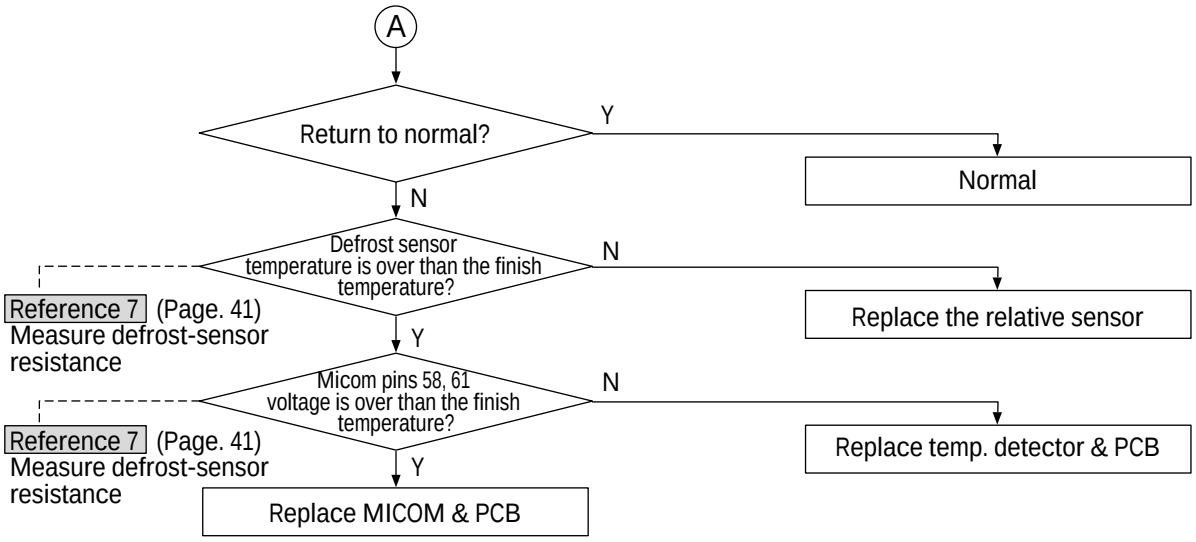


3) No defrosting

Precautions

1. Even though both F·R-defrost sensors short-circuit, normal operation continues without defrosting.(Refer to self-diagnosis function)
2. Even though the temperature fuse is off, there is no heating but defrosting natural temperature increase comp off-time takes longer.
3. Even though both F·R-defrost sensor are open, heating does not end and comp-off maintains with temperature fuse short-circuited.(Refer to self-diagnosis function)

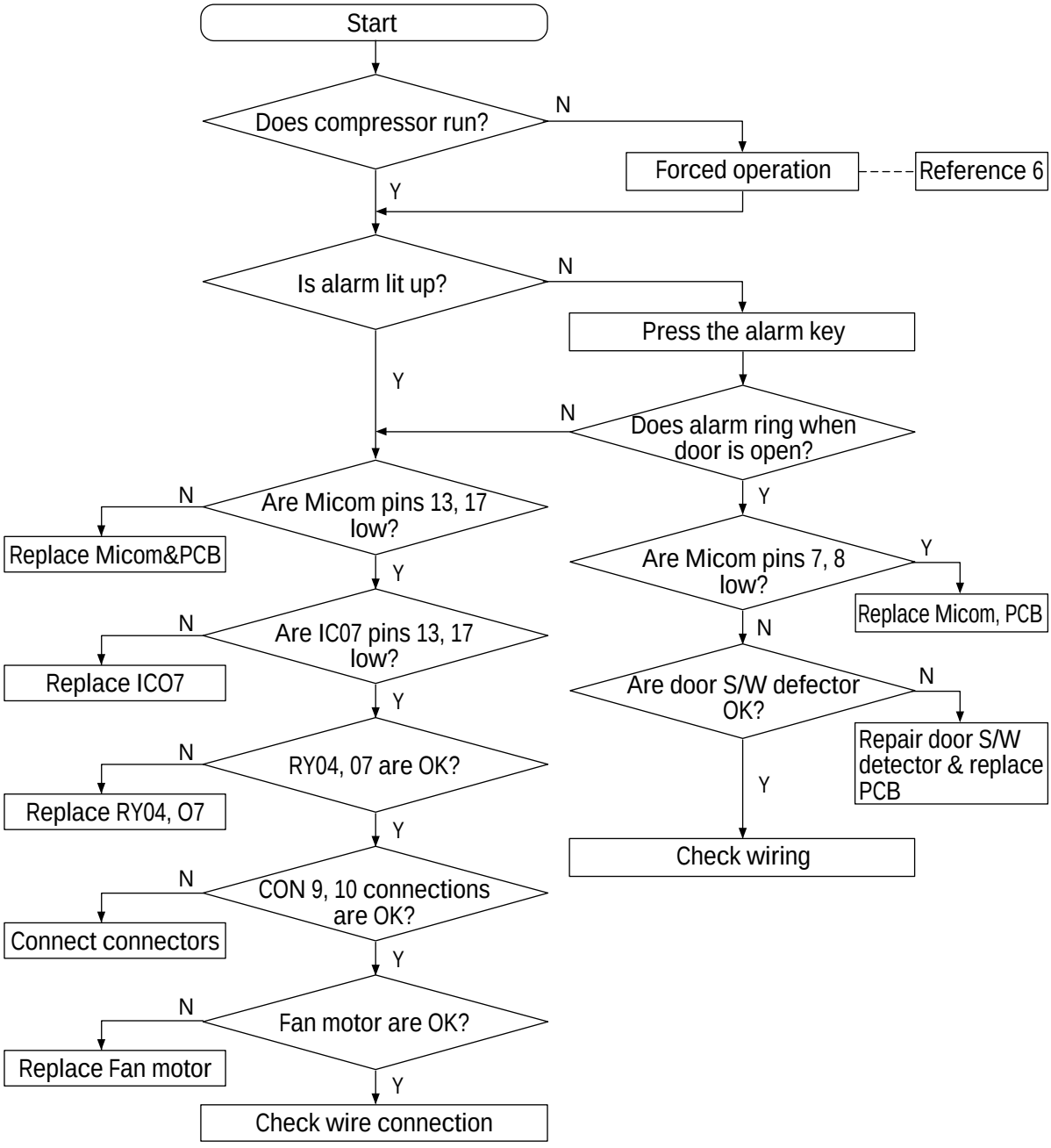



A
Return to normal?
Y
Normal
N
Defrost sensor temperature is over than the finish temperature?
N
Replace the relative sensor
Reference 7 (Page. 41)
Measure defrost-sensor resistance
Y
Micom pins 58, 61 voltage is over than the finish temperature?
N
Replace temp. detector & PCB
Reference 7 (Page. 41)
Measure defrost-sensor resistance
Y
Replace MICOM & PCB

5) Fan-motor does not run

Precautions

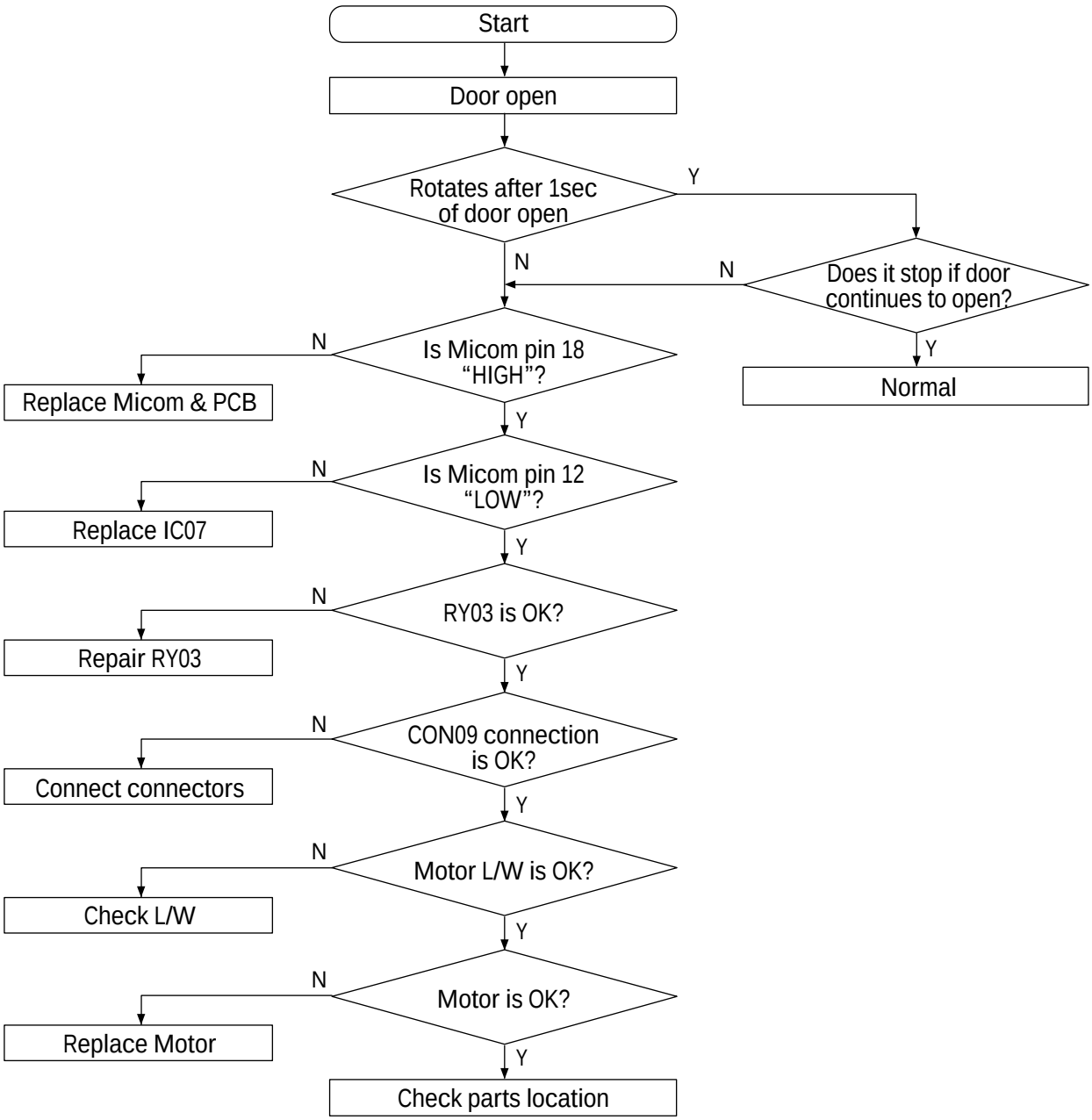
1. Compressor operates but fan does not run(F·R doors open)
2. Check door close



5) Fan motor in the refrigeration room does not work

Precautions

1. Fan-motor operates with 2 modes.(Static or Rotation)
2. Fan-motor rotates for 30 seconds after one second of door open.



6) Lamp Inspection

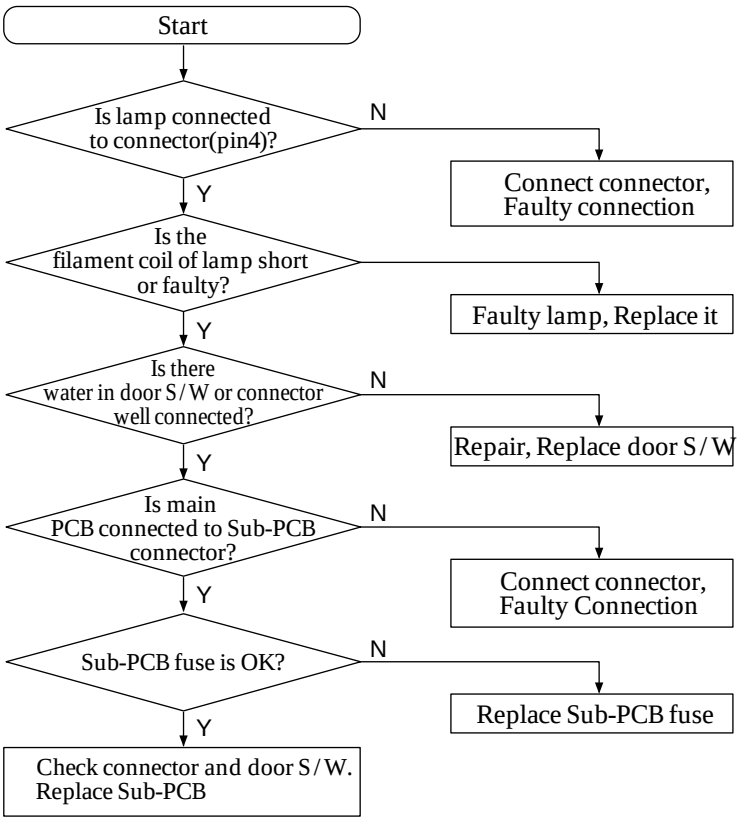
Note

1. When replacing Sub-PCB, power should be turned off, because Sub-PCB receives AC POWER INPUT and converts that to 1.5 X AC POWER INPUT.
2. It is impossible to check lamp with normal voltage tester, because lamp voltage is high.

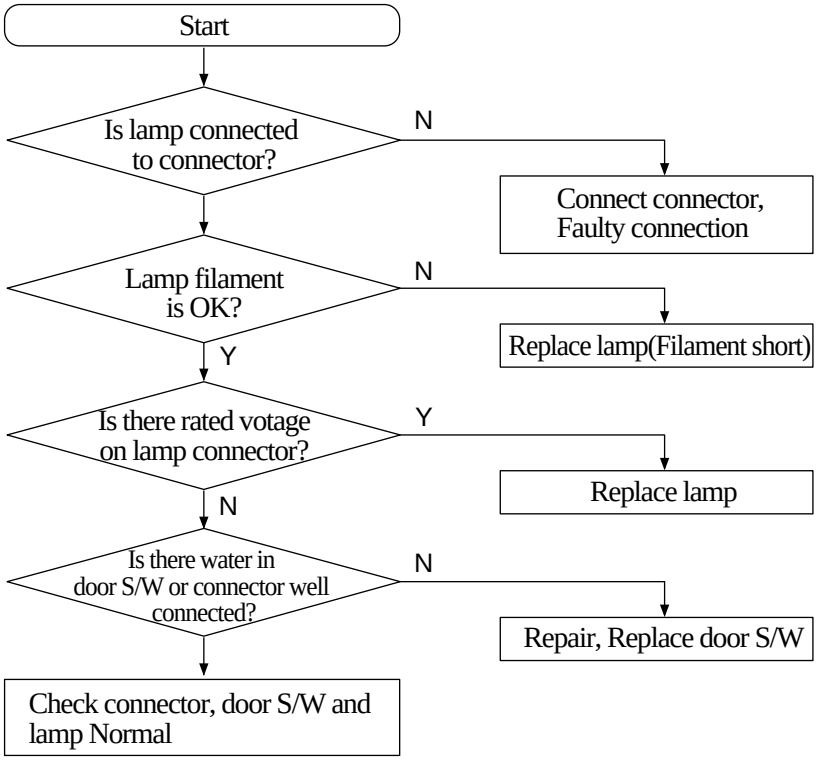
References

1. If new lamp does not turn on, that's because the protector is activated to prevent peak voltage when lamp is replaced.
   After replacing lamp, wait for 30 seconds after closing the door of refrigerator.
2. Lamp turns off automatically if the door of refrigerator is open for 10sec
   If door is closed and opened by the door S/W, lamp turns on again.
   If that carries out over twice, protector is activated and lamp maintains off.
3. If there is water in door S/W, lamp close not turn or off because Micom can not receive door open/close signal. Door S/W should be checked.
4. The connection between Main-PCB and Sub-PCB, Sub-PCB output and cabinet L/W, cabinet L/W and lamp are done by connector. If there is table with lamp check connector and lamp.
5. Freezer lamp is controlled by main PCB.

① Lamp in the refrigeration room does not light up

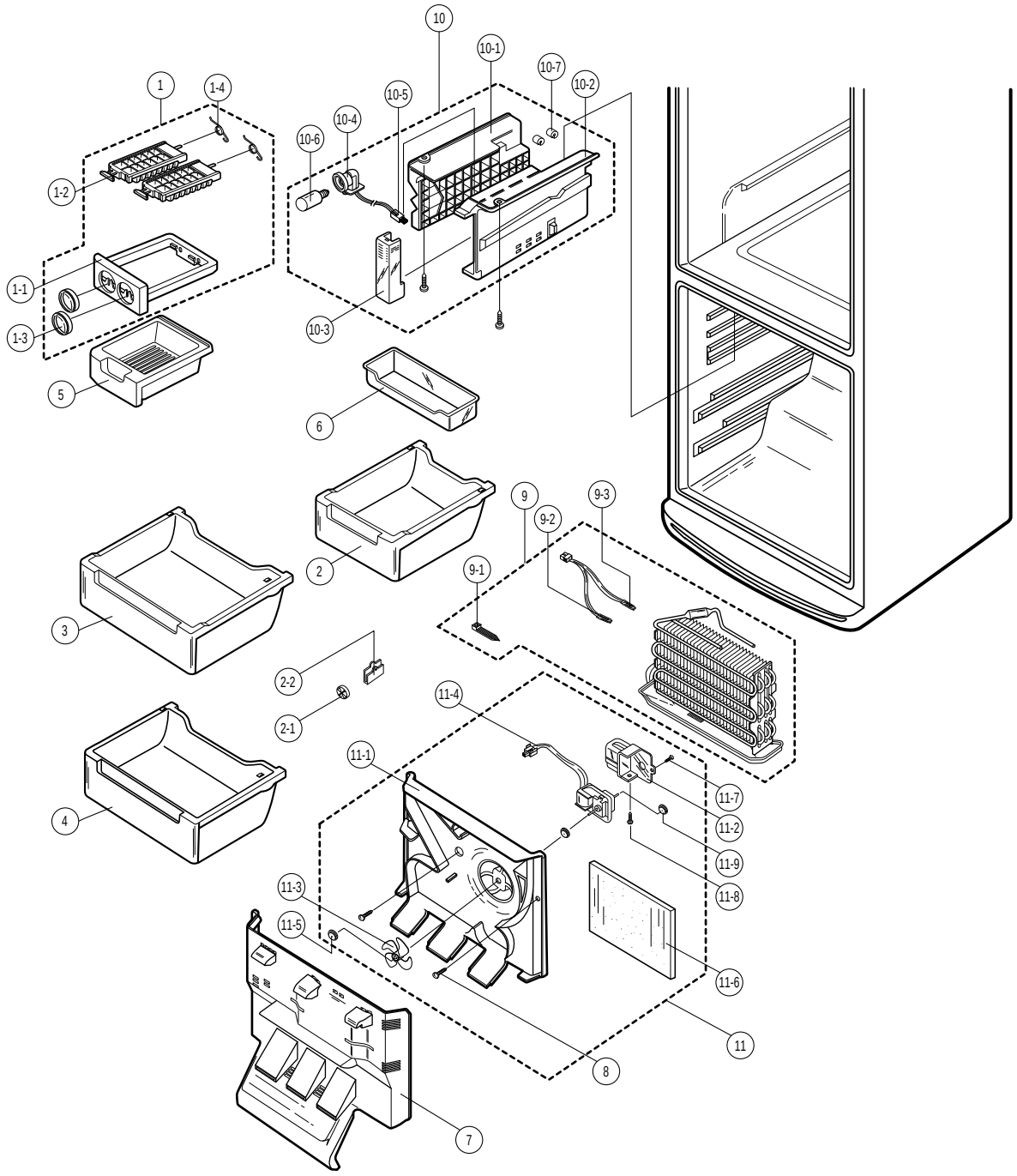


② Lamp in the freezer does not light up



8. Part List

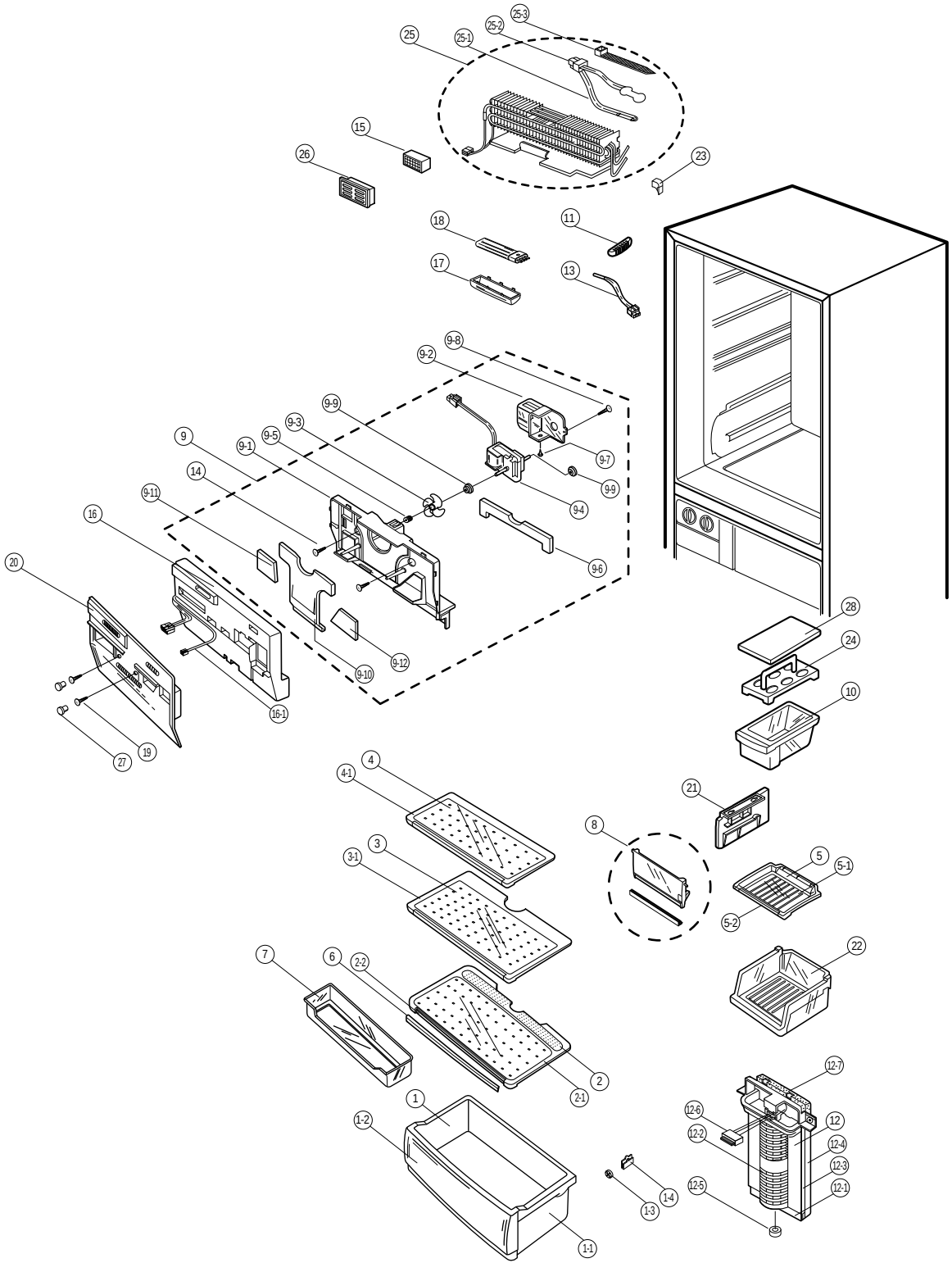
1. Freezer



NO	CODE-NO	ITEM	SPECIFICATION	Q'TY	REMARK
1	DA67-40203D	ASS'Y-TRAY ICE	HIPS	1	
1-1	DA71-20120A	FIXER-TRAY ICE	HIPS	1	
1-2	DA67-40182A	TRAY-ICE	PP	2	
1-3	DA64-40111A	KNOB-TRAY, ICE	HIPS	2	
1-4	DA61-20102A	SPRING	STS 304B WPB	2	
2	DA67-40200C	ASS'Y-TRAY, FREE(UPP)	HIPS	1	
2-1	DA66-10104A	ROLLER	POM	12	
2-2	DA71-20145A	FIXER-ROLLER	NY-66	12	
3	DA67-40201C	ASS'Y-TRAY, FREE(MID)	HIPS	1	
4	DA67-40202C	ASS'Y-TRAY, FREE(LOW)	HIPS	1	
5	DA67-10208A	TRAY-ICE CUBE	ABS	1	
7	DA63-10012A	ASS'Y-COVER EVAP FR(F)	PP(BJ-730)	1	
8	6002-000454	SCREW TAP, TH	TH 2S-4X12 STS	2	
9	DA59-40112C	EVAPORATOR-FRE ASS'Y	220V	1	
	DA59-40112D	EVAPORATOR-FRE ASS'Y	240V	1	
	DA59-40215K	EVAPORATOR-FRE ASS'Y	127V	1	
	DA59-40112E	EVAPORATOR-FRE ASS'Y	110V	1	
9-1	6501-000123	CABLE-TIE	L=140	2	
9-2	DA32-10105G	SENSOR DEF(R)	502AT	1	
9-3	DA47-10148A	ASS'Y-FUSE THERMOS	250V / 10A	1	
10	DA61-70181G	ASS'Y-SUPT FRE		1	
10-1	DA61-70114A	SUPT FREE L	HIPS	1	
10-2	DA61-70115A	SUPT FREE R	HIPS	1	
10-3	DA63-10400B	COVER-LAMP F	MIPS	1	
10-4	DA47-40112P	SOCKET-LAMP	24PBT	1	
10-5	DA32-10105A	SENSOR FRE	502AT	1	
10-6	4713-000188	LAMP-FRE	220V / 15W	1	
	4713-000213	LAMP-FRE	240V / 15W	1	
	4713-000178	LAMP-FRE	110V~130V / 15W	1	
10-7	DA63-40105A	GROMMET-RAIL	RUBBER	2	
11	DA63-10013A	ASS'Y-COVER EVAP, RE(F)	220V / 50,60HZ	1	
	DA63-10013C	ASS'Y-COVER EVAP, RE(F)	240V / 50HZ	1	
	DA63-10013H	ASS'Y-COVER EVAP, RE(F)	127V / 60HZ	1	
	DA63-10013F	ASS'Y-COVER EVAP, RE(F)	110V / 60HZ	1	
11-1	DA63-10214A	COVER-EVAP RE(F)	PP	1	
11-2	DA63-10364A	COVER-MOTOR FAN	PP	1	
11-3	DA31-20103A	MOTOR-FAN	ABS Φ 90	1	

NO	CODE-NO	ITEM	SPECIFICATION	Q'TY	REMARK
11-4	DA31-10109B	MOTOR FAN	AMRHB-008WTEB	1	
	DA31-10109F	MOTOR FAN	AMRHB-008UVEB	1	
	DA31-10109W	MOTOR FAN	AMRHB-008ZREB	1	
	DA31-10109D	MOTOR FAN	AMRHB-008ZQEB	1	
11-5	DA61-20128D	SPRING-FAN	STS 27WR	1	
11-6		SEAL-COVER EVAP RE(F)	FOAM-LEX ALT3	1	
11-7	6002-000224	SCREW TAP TH	2S-4 X 12 FE FZY	1	
11-8	DA72-60042A	GROMMET-CASE MOTOR	NBR(BLK)	1	
11-9	DA63-40119A	GROMMET-FAN MOTOR	NBR(BLK)	1	

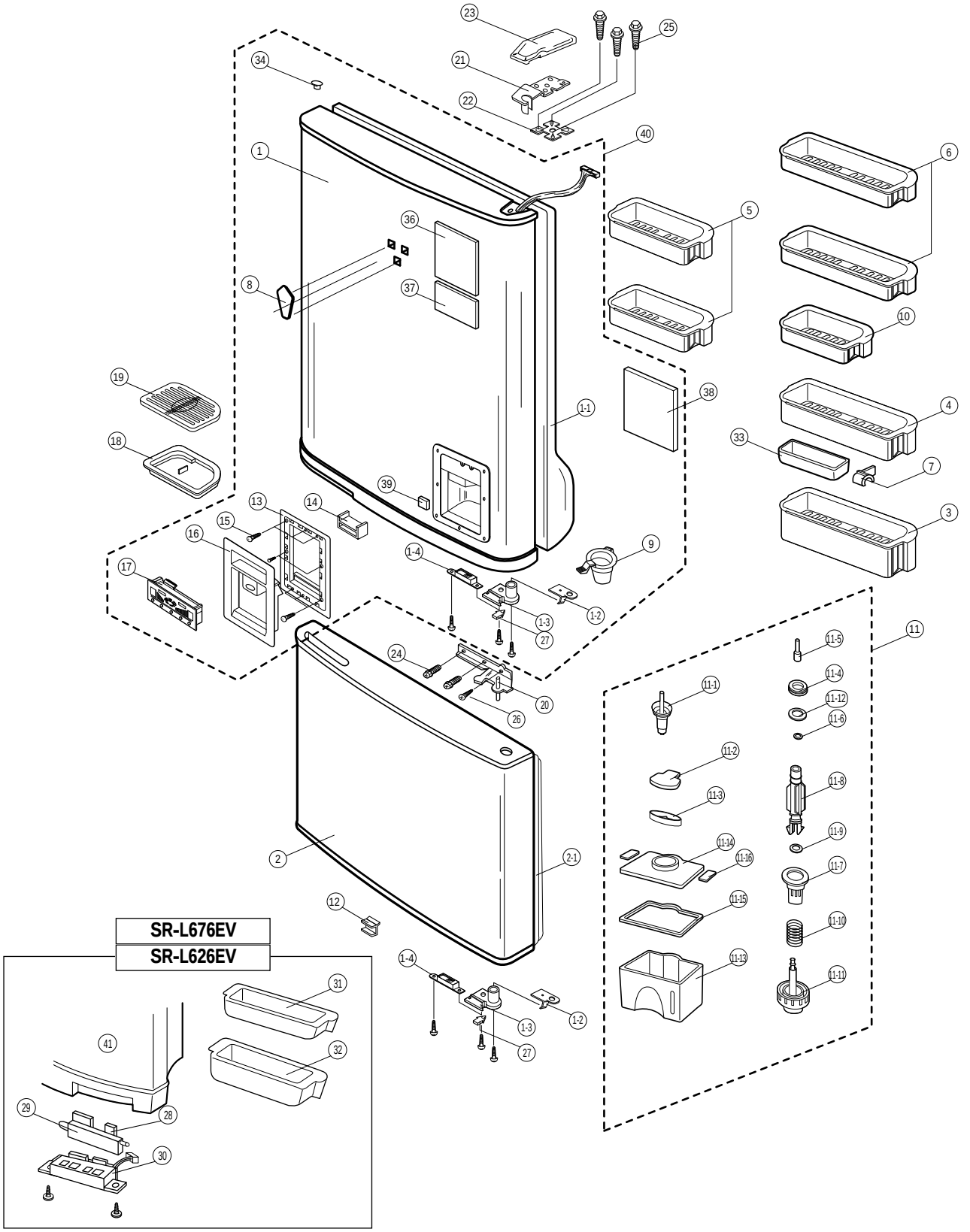
2. Refrigeration room



NO	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	DA67-10230B	ASS'Y-WARE VEGETABLE	ABS	1	
1-1	DA67-10229A	WARE-VEGETABLE	ABS 711 X 409 X 221	1	
1-2	DA63-10359B	COVER-VEGETABLE	GPPS 711 X 211 X 67	1	
1-3	DA66-10104A	ROLLER-FREE	POM	4	
1-4	DA71-20145A	FIXER-ROLLER	NY-66	4	
2	DA67-20169B	ASS'Y-SHELF REF LOW		1	
2-1	DA67-20142B	SHELF-REF LOW	ABS 721 X 404 X 24	1	
2-2	DA64-20116A	TRIM-SHELF LOW	T=0.5	3	
3	DA67-20170B	ASS'Y-SHELF REF MID(A)		1	
3-1	DA67-20143B	SHELF-REF MID(A)	ABS 723 X 400.5 X 24	1	
4	DA67-20171B	ASS'Y-SHELF REF MID(B)		1	
4-1	DA67-20144B	SHELF-REF MID(B)	ABS 723 X 331.5 X 24	1	
5	DA67-20190C	ASS'Y-SHELF REF UPP		1	
5-1	DA67-20140A	SHELF-REF UPP	GPPS 338.5 X 250 X 24	1	
5-2	DA64-20117A	TRIM-SHELF UPP	T=0.5 GOLD	1	
6	DA63-30113A	GASKET-VEG FR	RD-PVC & SOFT-PVC	1	
7	DA67-40194A	POCKET-VEGETABLE	GPPS 679 X 158 X 65	1	
8	DA63-10577C	ASS'Y-COVER CHILLED		1	
9	DA63-10534E	ASS'Y-COVER EVAP RE(R)	220V / 50HZ	1	
	DA63-10534F	ASS'Y-COVER EVAP RE(R)	240V / 50HZ	1	
	DA63-10534R	ASS'Y-COVER EVAP RE(R)	127V / 60HZ	1	
	DA63-10534G	ASS'Y-COVER EVAP RE(R)	110V / 60HZ	1	
9-1		COVER-EVAP RE(R)	PP 669 X 239 X 105	1	
9-2	DA63-10364A	COVER-MOTOR FAN	PP 75.5 X 95 X 47	1	
9-3	DA31-20103A	FAN	ABS P190 X 27	1	
9-4	DA31-10109B	MOTOR FAN	220V / 50HZ	1	
	DA31-10109F	MOTOR FAN	240V / 50HZ	1	
	DA31-10109W	MOTOR FAN	127V / 60HZ	1	
	DA31-10109D	MOTOR FAN	110V / 60HZ	1	
9-5	DA61-20128D	SPRING-FAN	STS 27WR	1	
9-6	DA72-60160A	SEAL-COVER EVAP RE(R)	FOAM-LEX(AL) B	1	
9-7	DA72-60042A	GROMMET-CASE MOTOR	NBR(BLK)	1	
9-8	6002-000224	SCREW-TAP TH	2S-FX12 FE FZY	1	
9-9	DA63-40119A	GROMMET-FAN MOTOR	NBR	2	
9-10	DA72-60171A	SPACER-COVER B	FOAM-PS	1	
9-11	DA72-60170A	SEAL-COVER EVAP RE(L)	FOAM-LEX T=3	1	
9-12	SPPS	SEAL-COVER EVAP RE(R)		1	
10	DA67-10144A	CASE-EGG		1	

NO	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
11	DA63-10467A	COVER-SENSOR REF	HIPS	2	
12	DA74-20130D	ASS'Y-COVER DUCT REF	220V~240V	1	
	DA74-20130F	ASS'Y-COVER DUCT REF	110V~127V	1	
12-1	DA63-10215A	COVER-DUCT REF		1	
12-2	DA31-20003A	BLADE-AIR	HIPS 477 X 232 X 54	1	
12-3	DA72-40178A	SPACER-COVER DUCT	FOAM-PS	1	
12-4	DA72-60159A	SEAL-DUCT RE	FOAM-PS	1	
12-5	DA60-40104B	WASHER	HIPS Φ4 X T1.0	1	
12-6	DA31-10107D	ASS'Y-GEARD MOTOR	M2 LC 18AR 02	1	
	DA31-10107E	ASS'Y-GEARD MOTOR	M2 BC 18AR 02	1	
12-7	DA72-60161C	SEAL-DUCT, AIR	EDPM T=5	1	
13	DA32-10105B	SENSOR-R	502AT	1	
14	6002-000454	SCREW	TH T2-4 X 12 STS	2	
15	DA02-90106B	CATALYST	T15 X W40 X L70	2	
16	DA72-40010C	ASS'Y-SPACER COVER EVAP R	FOAM-PS	1	
16-1	DA39-20122A	WIRE-GEARD MOTOR		1	
17	DA63-10474A	COVER-LAMP R ASS'Y	ABS+PMMA	1	
18	4713-000175	CFL-LAMP	11W OSRAM	1	
19	6002-000454	SCREW	TH T2-4 X 12 STS	1	
20	DA63-10220	COVER-EVAP REF FR	HIPS 671 X 275 X 115	2	
21	DA61-70119A	SUPPORT-CHILLED	GPPS	1	
22	DA67-40141A	TRAY-CHILLED	GPPS	1	
23	DA72-60020A	SEAL-ABSORBER SOUND	T3 X 300 X 40 PAM	1	
24	DA67-40169A	TRAY-EGG	GPPS	1	
25	DA59-40111C	EVAPORATOR REF ASS'Y	220V	1	
	DA59-40111D	EVAPORATOR REF ASS'Y	240V	1	
	DA59-40238E	EVAPORATOR REF ASS'Y	127V	1	
	DA59-40111E	EVAPORATOR REF ASS'Y	110V	1	
25-1	DA47-10148B	ASS'Y-THERMOS FUSE	250V / 10A	1	
25-2	DA32-10105G	SENSOR-DEF R	125, 250V, 10.5A	1	
25-3	6501-000123	CABLE-TIE	NY-66 L=140	1	
26	DA63-10461A	CAP-PURIFIER	ABS	1	
27	DA67-30266D	CAP-SCREW	PP SC-93437R	2	
28	DA63-10363A	COVER-EGG	GPPS	1	

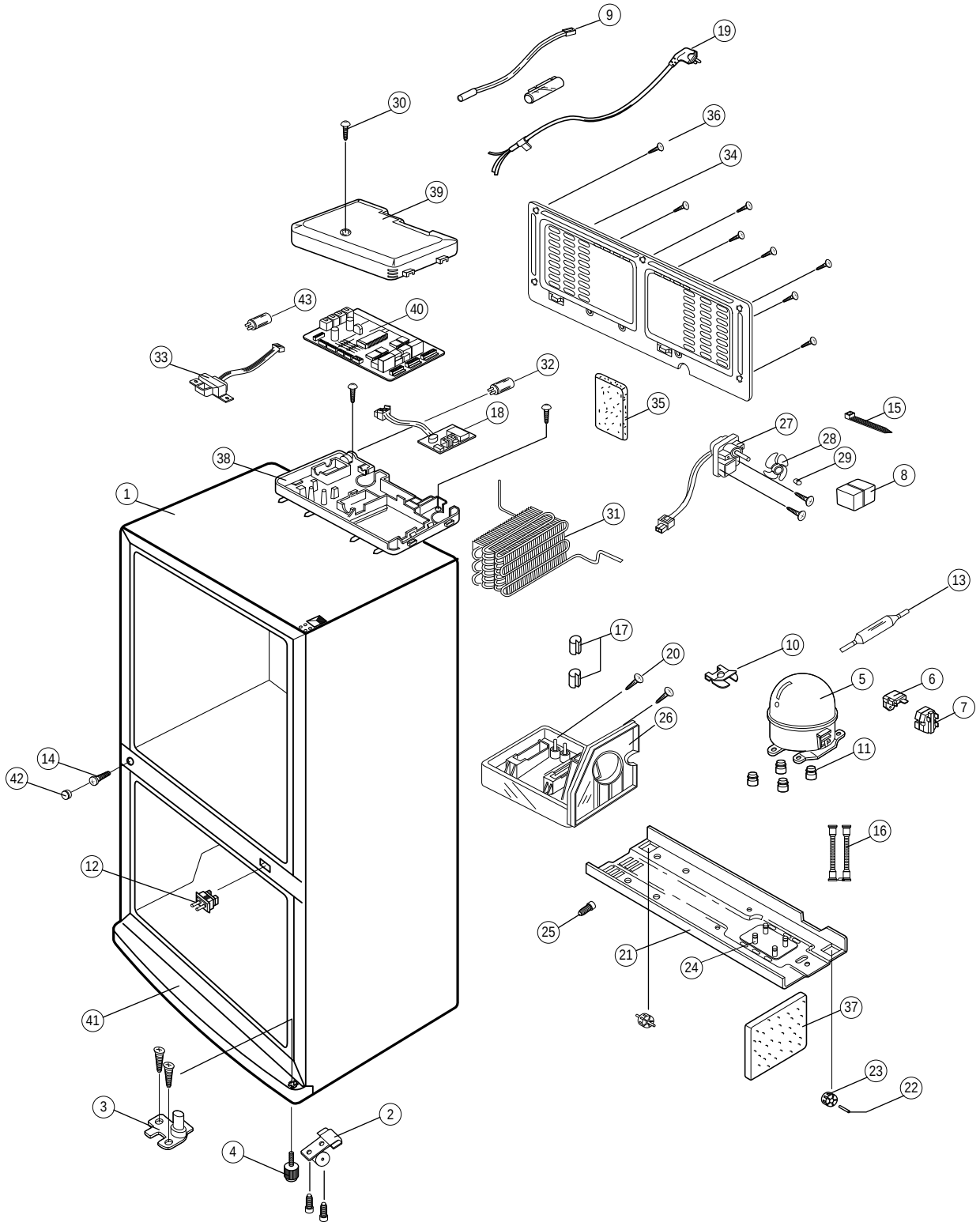
3. Door parts



NO	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1		ASS'Y-DOOR FOAM REF	SR-L628EV / L678EV	1	
1-1	DA63-30178A	GASKET-DOOR REF		1	
1-2	DA71-40135A	STOPPER-MID	STS 304 T2	2	
1-3	DA63-40118A	GROMMET-HINGE MID	POM	2	
1-4	DA66-90111A	ASS'Y-AUTO CLOSE	POM	2	
2		ASS'Y-DOOR FRE		1	A/S PART
2-1	DA63-30178B	GASKET-FREE		1	
3	DA63-20001A	GUARD-REF LOW ASS'Y		1	
4	DA63-20175A	GUARD-REF MID R	GPPS	1	
5	DA63-20185A	GUARD-REF UPP L	GPPS	2	
6	DA63-20150A	GUARD-REF UPP R	GPPS	2	
7	DA71-70108A	GUIDE-BOTTLE	PE	2	
8	DA64-50113B	ASS'Y-MASCOT	GOLD	1	
9	DA71-20155A	FIXER-CASE ASS'Y	POMPOUNT M-203	1	
10	DA63-20171A	GUARD-REF MID L	GPPS	1	
11	DA74-90107A	ASS'Y-WATER DISPENSER	PC / BIO SENSOR	1	
11-1	DA74-90001A	ASS'Y-COCK	LD-PE	1	
11-2	DA67-30216A	CAP-COVER TANK	ABS	1	
11-3	DA29-10001A	FILTER-WATER	PE	1	
11-4	DA63-30003B	PACKING-BOTTLE B	SILICONE(TSE-221)	1	
11-5	DA67-30208A	CAP-AIR DRAIN	ABS	1	
11-6	DA60-90103A	O-RING A	SILICONE(TSE-221)	1	
11-7	DA67-10163A	CASE-DISPENSER C	PC	1	
11-8	DA71-70124A	GUIDE-PUSH	PC	1	
11-9	DA60-90103B	O-RING B	SILICONE(TSE-221)	1	
11-10	DA61-20102A	SPRING A	STS 304 WPB	1	
11-11	DA71-70123A	GUIDE-PIN	PC	1	
11-12		PACKING-BOTTLE C	SILICONE(TSE-221)	1	
11-13	DA74-90118A	TANK-WATER	ABS	1	
11-14	DA63-10401A	COVER-TANK	ABS	1	
11-15	DA63-30139A	GASKET-COVER TANK	SILICONE(TSE-221)	1	
11-16	DA65-20004A	CLAMP-TANK	ABS	2	
12		SUPT-GASKET B	ABS	2	
13	DA64-20121A	TRIM-DISPENSER ASS'Y	ABS(MP-960)	1	
14	DA63-30002A	PACKING TRAY	SILICONE(TSE-221)	1	
15	6002-000454	SCREW TH	TH 4 X 10 STS	8	

NO	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
16	DA63-10472C	COVER-DISPENSER ASS'Y	ABS	1	
17	DA41-20101B	ASS'Y-PCB DISPLAY		1	
18	DA67-40167B	TRAY-WATER	ABS	1	
19	DA64-20104A	TRIM-TRAY	ABS(MP-0160)	1	
20	DA61-10153A	ASS'Y-HINGE MID		1	
21	DA61-10151A	HINGE-UPP	SHP1 T3.2	1	
22	DA63-50138A	SHIM-HINGE UPP	RD-PVC T1	1	
23	DA63-10399A	CAP-HINGE UPP	ABS	1	
24	DA60-10123A	SCREW-TAP TITE	TAP TITE M6 X 24	1	
25	DA60-10123B	SCREW-TAP TITE	TAP TITE M6 X 16	2	
26	6002-000458	SCREW-TH	FH1 4 X 16 STS	4	
27	DA71-10272A	REINF-HINGE, REF	SHP1 T3	1	
33	DA63-20188A	GUARD-VARIETY, A	GPPS	2	
34	DA63-10504B	CAP-AIR	ABS	1	
36		LABEL-WORLD BEST	PVC	2	
37		LABEL-NON CFC, A	WHT21	1	
38		LABEL-USAGE, DISP	PVC	1	
39		LABEL-LOCK	PVC	1	
40		ASS'Y-DOOR, REF	A/S PART	1	
41	DA60-40104D	WASHER	ID11.2	1	
42	DA60-40104E	WASHER	ID13.0	1	
SR-L676EV, SR-L626EV					
1		ASS'Y-DOOR FOAM REF	SR-L626EV/L676EV	1	
1-1	DA63-30178A	GASKET-DOOE REF		1	
28	DA41-20102C	PCB-PANEL ASS'Y	SR-L626EV/L676EV	1	
29	DA63-10366A	COVER-PCB HANDLE	SR-L626EV/L676EV	1	
30	DA61-60101C	SLIDER ASS'Y	SR-L626EV/L676EV	1	
31	DA63-20152A	GUARD-REF MID	GPPS	1	
32	DA63-20149A	GUARD REF LOW ASS'Y	GPPS	1	
35	DA63-20189A	GUARD-VARIETY, B	GPPS	1	
41		ASS'Y-DOOR REF	A/S PART	1	

4. Cabinet parts & unit



NO	CODE-NO	ITEM	SPECIFICATION	Q'TY	REMARK
1		ASS'Y-CABI FOAM	SRG-L678EV	1	
		ASS'Y-CABI FOAM	SRG-L676EV	1	
2	DA61-40110A	ASS'Y-MOVING CASTER		2	
3	DA61-10143A	HINGE-LOW	SHPI T3.2	1	
4	DA61-30103A	LEG-FRONT	P.P	1	
5	SK190Q-L2U	COMPRESSOR	240V / 50HZ SR-L676(8)EV	1	
	SK190H-L2U	COMPRESSOR	220V / 50, 60HZ SR-L626(8)EV	1	
	SK182Q-L2U	COMPRESSOR	240V / 50HZ SR-L626(8)EV	1	
	SK182H-L2U	COMPRESSOR	220V / 50, 60HZ SR-L626(8)EV	1	
	SK182P-L2W	COMPRESSOR	127V / 60HZ SR-L626(8) / 676(8)EV	1	
	SK182E-L2W	COMPRESSOR	110V / 60HZ SR-L626(8) / 676(8)EV	1	
6	DA34-10003W	O / L-PROTECTOR	4TM314RHBYY-53	1	
	DA34-10003N	O / L-PROTECTOR	4TM308PHBYY-53	1	
	DA34-10003G	O / L-PROTECTOR	4TM232SHBYY-53	1	
	DA34-10003P	O / L-PROTECTOR	4TM444NHBYY-53	1	
	DA34-10003E	O / L-PROTECTOR	4TM445SHBYY-53	1	
7	DA35-10003L	PTC-RELAY	PTHAS-T220M350D	1	
	DA35-10002N	PTC-RELAY	PTHAS-T330M385D	1	
	DA35-10003H	PTC-RELAY	PTHAS-T100M200B	1	
8	DA63-10477A	COVER-RELAY	NORYL T2 BLK HOOK	1	
9	DA32-10105F	SENSOR-EXIT		4	
10	DA65-20101A	CLAMP-COMP	STC5	4	
11	DA63-40165A	GROMMET-COMP	NBR	1	
12	DA34-10122A	SWITCH-DOOR	250V	1	
13	DA73-30102A	DRYER	L140	1	
14	DA60-10124A	SCREW-TAP TITE	M4	1	
15	6501-000123	CABLE-TIE	NY-66	1	
16	DA74-30131A	HOSE-DRAIN SUB	HDPE	2	
17	DA63-40171B	GROMMET-DIS. PIPE	NBR	4	
18	DA41-20002A	ASS'Y-PCB INVERTER	220V / 50HZ	1	
	DA41-20147A	ASS'Y-PCB INVERTER	240V / 50HZ	1	
	DA41-20160A	ASS'Y-PCB INVERTER	127V / 60HZ	1	
	DA41-20148A	ASS'Y-PCB INVERTER	110V / 60HZ	1	
19		POWER-CORD AC	OPTION	1	
20	DA60-10124A	SCREW-TAP TITE	M4 X 12	2	
21	DA71-60119A	BASE-COMP	SBHG1	1	
22	DA60-90101A	RIVET-CASTER	MSWR 18A	2	
23	DA61-40101A	CASTER-REAR	NY-66	2	
24	DA66-20112A	SHAFT-COMP	SUM 24	4	
25	DA60-10107A	SCREW-EARTH	BSBN PT M4 X 10	1	
26	DA67-40204A	ASS'Y-TRAY DRAIN WATER		1	

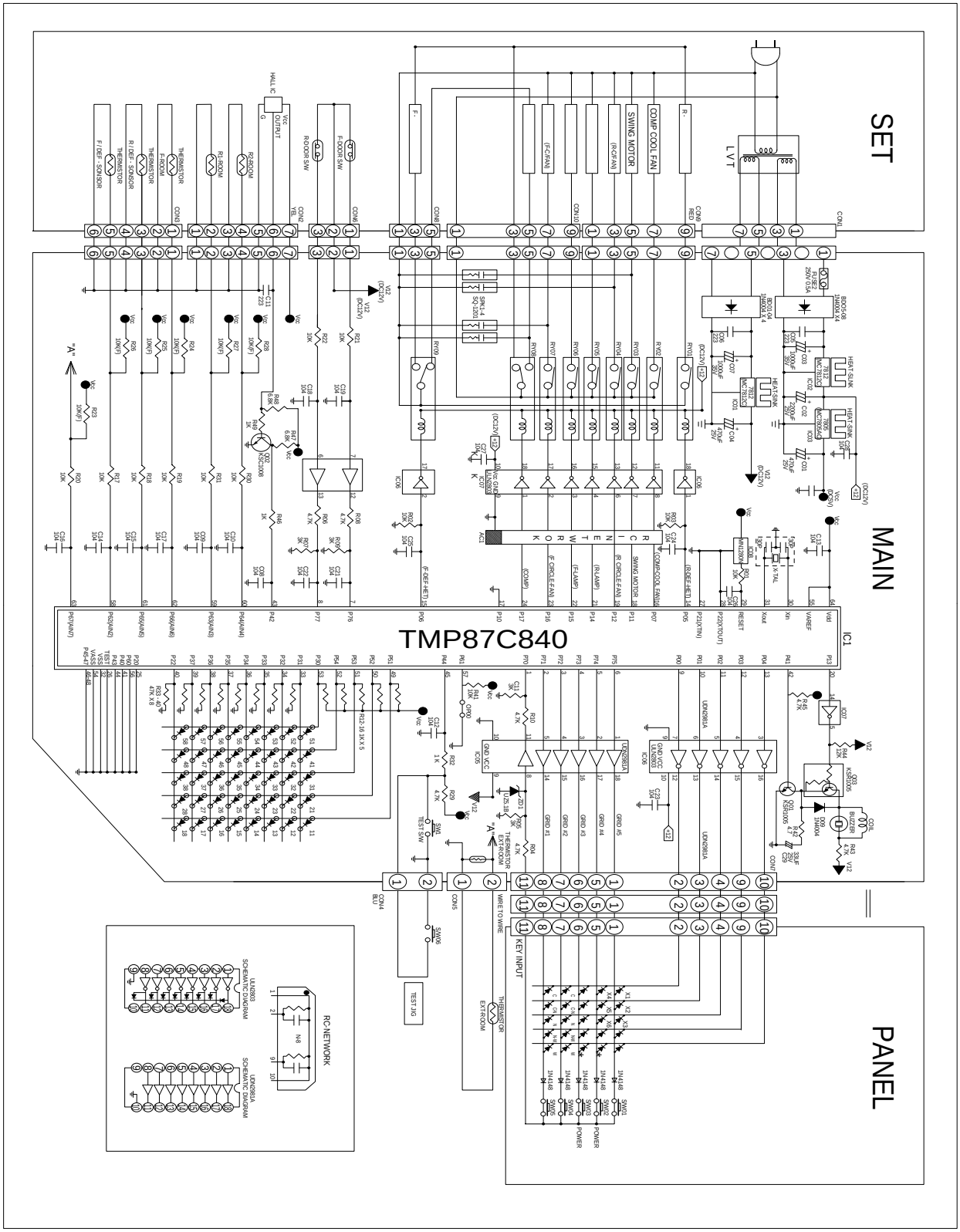
NO	CODE-NO	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
27	DA31-10110F	CIRCUIT-MOTOR	IS3208-SCF7A 220/50	1	
	DA31-10110H	CIRCUIT-MOTOR	IS3208-SCL5A 240/50	1	
	DA31-10110L	CIRCUIT-MOTOR	IS3208-SCO6A 127V/60HZ	1	
	DA31-10110G	CIRCUIT-MOTOR	IS3208-SCH6A 110/60	1	
28	DA31-20101A	FAN	ABS	2	
29	DA61-20128D	SPRING-FAN	STS 27	1	
30	6002-000215	SCREW	TH1 4 X 16	1	
31	DA73-10301A	ASS'Y-SUB COND	SR-L49, L52	1	
32	2501-000401	CAPACITOR	5μF/350VAC	1	
	2401-000511	CAPACITOR	12μF/250VAC	1	
	2501-000275	CAPACITOR	125μF/125VAC	1	
33	DA26-30110C	DC-TRANS	220V/50, 60HZ	1	
	DA26-30110A	DC-TRANS	240V/50HZ	1	
	DA26-30112B	DC-TRANS	127V/60HZ	1	
	DA26-30112A	DC-TRANS	110V/60HZ	1	
34	DA63-10211A	COVER-COMP	SECC(POM) T0.45	1	
35	DA72-60020A	SEAL-ABSORB	PAM T10	1	
36	6002-000215	SCREW	1.4 X 12 FE FZY	1	
37	DA72-60020A	SEAL-ABSORB R	PAM T10	1	
38	DA67-10105A	CASE-PCB PANEL	P.P	1	
39	DA63-10001B	COVER-PCB PANEL	P.P	1	
40	DA41-20105B	ASS'Y-MAIN PCB	T1.6 X W136 X L197	1	
41	DA63-10262A	COVER-LEG FR	P.P	1	
42	DA67-30218G	CAP-SCREW	P.P	1	

11. PCB Parts List

Service Parts

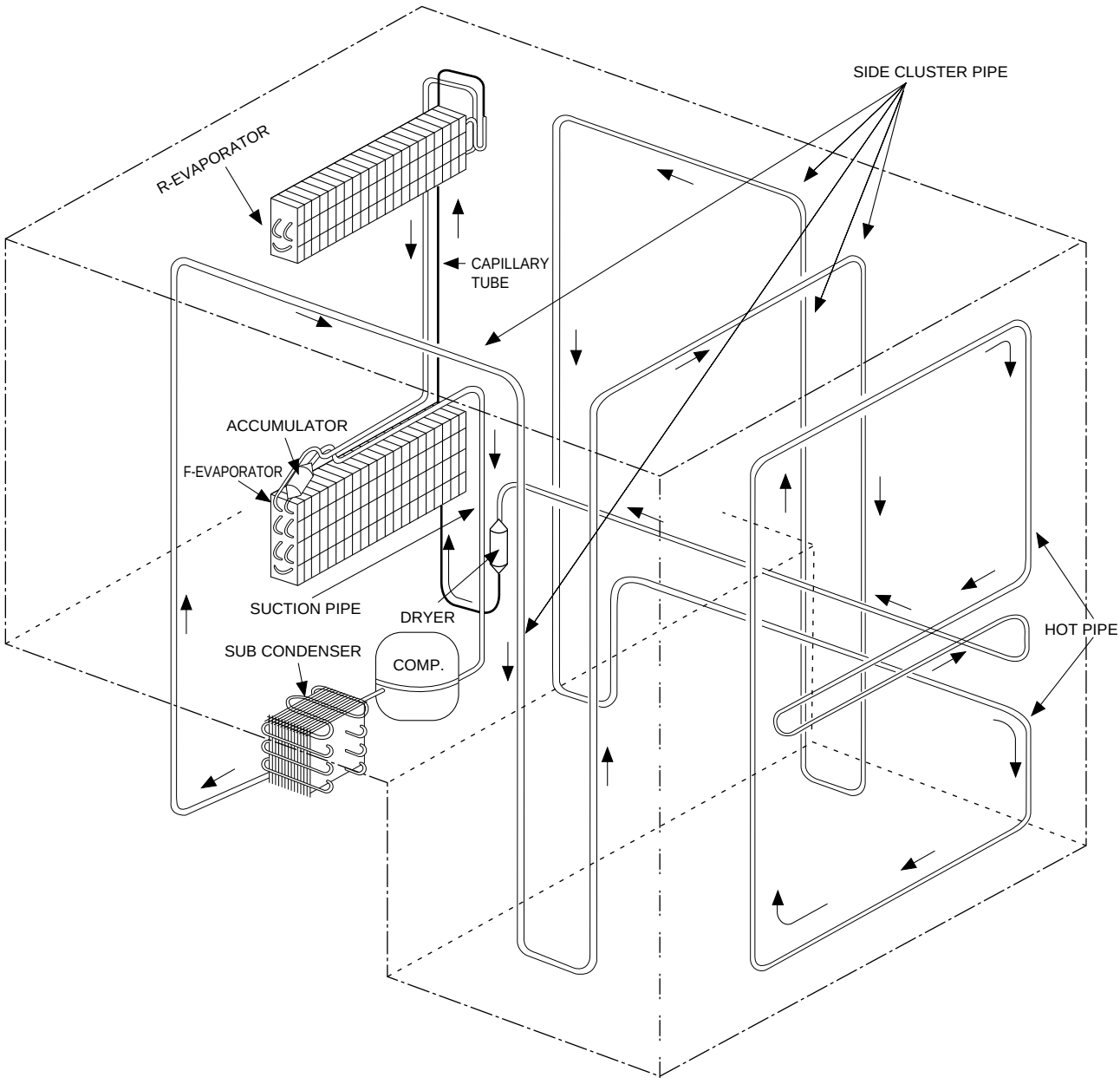
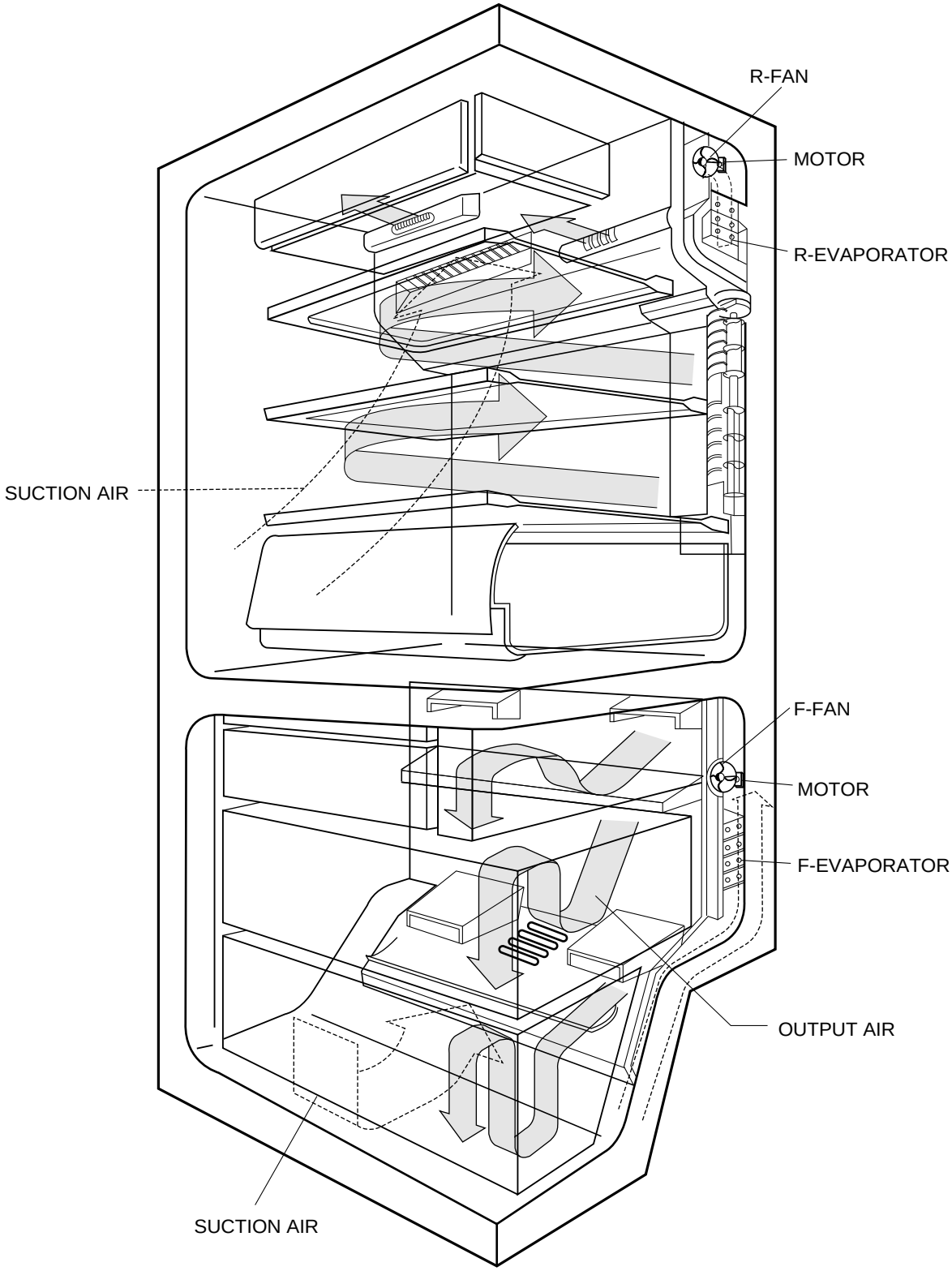
NO	CODE-NO	ITEM	STANDARD	COMPANY	Q'TY	REMARKS
1		TRANS-DC	ACE-PROJECT	KOMEX Electronics	1	
2		R1-SENSOR	502 AT	Dong Kwang	1	
3		R2-SENSOR	502 AT	Dong Kwang	1	
4		R DEF-SENSOR	502 AT	Dong Kwang	1	
5		F DEF-SENSOR	502 AT	Dong Kwang	1	
6		EXT-SENSOR	502 AT	Dong Kwang	1	
7		F-SENSOR	502 AT	Dong Kwang	1	
8		PCB PANEL-B	KLS-049S	ROHM KOREA	1	DISP NO
9		PCB PANEL-A	SSG-ACE	Seoul Semiconductor	1	DISP YES
10		ASS'Y BUTTON-PCB	BUTTON-0537	Seoul Semiconductor	1	DISP NO
11		PCB SUB	INVERTER PCB	YuYu	1	Fluorescent lamp of R-Room
12		PCB-MAIN	ACE-PROJECT	Kwangju Electronics	1	

10. PCB Circuit Diagram



5-3 Circulation of Refrigerant (H.M CYCLE)

Compressor → Sub condenser → Cluster pipe → Hot pipe → Dryer → Capillary tube → R-Evaporator → F-Evaporator → Accumulator → Suction pipe → Compressor



5-4 Cool Air Circulation